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TABLE OF CONTENTS

| | | |
|---|-------------------------------|----|
| This Is Our Arboretum | Pat Ballard | 1 |
| Western White Pine | C. Frank Brockman | 5 |
| Ye Olde Herballs | Mrs. O. B. Thorgrimson | 6 |
| Arboretum Spotlight | | 9 |
| Winter Aspects—January, 1955 | Else M. Frye | 10 |
| Conspicuous Beach Plants of the Puget Sound Area | Mrs. James P. Robertson | 13 |
| Fruits for Western Washington Suburban Gardens | Arthur S. Myher | 14 |
| Lilacs | Sally Bunge | 16 |
| American Trees for British Forests | F. C. Livingstone | 19 |
| Winter Damage to Plants in the Arboretum | B. O. Mulligan and J. A. Witt | 20 |
| Notes and Comment | | 22 |
| Extracts from a Letter from Mr. Donald G. Graham | | 23 |
| Arboretum Notebook | | 24 |
| Let's Brag About Our Arboretum Units | | 27 |
| Book Reviews | | 28 |

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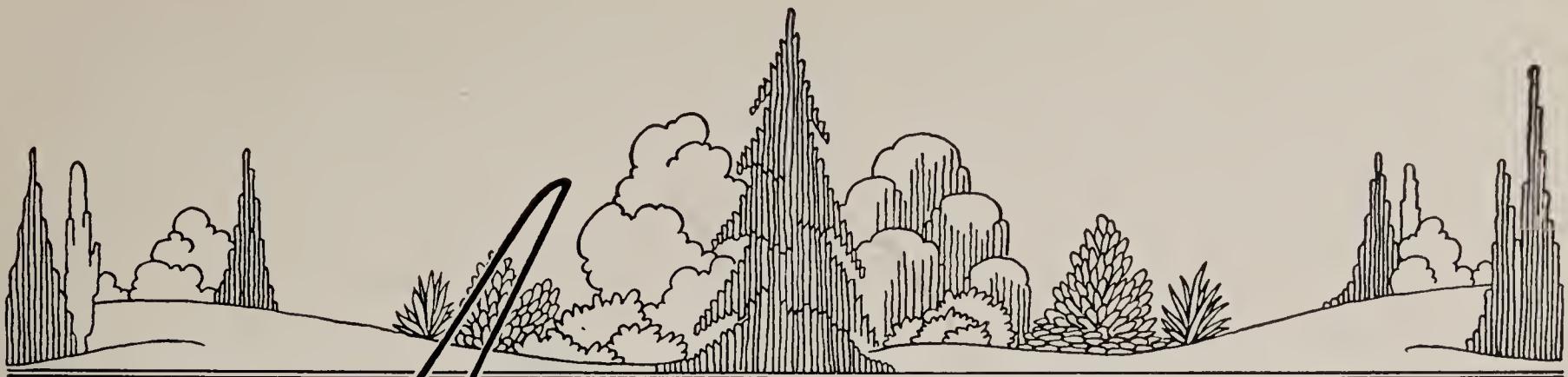
Hand cultivator
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The Arboretum Bulletin

VOLUME XIX

SPRING, 1956

NUMBER 1

This Is Our Arboretum

PAT BALLARD*

DURING the past few months, in the midst of and because of the threat to the Arboretum by the Toll Bridge Authority with its plan to take over almost one-fifth of the acreage for roads, cloverleafs, under- and overpasses, fills and approaches for the second Lake Washington Bridge, there have been countless questions asked.

"What is an arboretum?"

"What makes it different from a park?"

"What was the origin of our Arboretum?"

"What is the Arboretum Foundation?"

"What are Arboretum Units?"

"What can the Arboretum do for me?"

"Why is this Arboretum important?"

All of these and many more questions have been asked over and over again, and in trying to answer them each of us has come to a new realization of just what the Arboretum means to us as individuals, to our community and our State, and we have gained a better understanding of its place among the horticultural institutions of the nation and of the world.

"What is an arboretum?" It is an ample area set aside for the purpose of growing and displaying a collection of woody plant material hardy in a given region. It is actually a museum with living exhibits, a laboratory of living specimens. In an arboretum the labeled plant material is botanically arranged accord-

ing to plant families. These exhibits or specimens are available for study by gardeners, nurserymen, landscape designers, or students of botany, horticulture, or forestry. These trees and shrubs may also be (and are, in our Arboretum) grouped in combination plantings for effects at certain seasons, such as in a winter garden containing shrubs which bloom between November and March, or showing fall leaf color and fruits.

An arboretum tests plant material and propagates that which has proven successful, then aids in distributing that plant material to other botanical institutions and to nurserymen, thus making new material available to the gardeners in its immediate and in far distant areas. All this the Arboretum here is doing. The University of Washington Arboretum also exchanges large quantities of seeds with botanical and horticultural institutions all over the world—approximately 150 outside the U.S.A.

"What makes an arboretum different from a park?" That question has probably been answered in the above statements, but to be specific—an arboretum is planned to give satisfaction not only to the eye by its display,

*We feel this article by Mrs. Page Ballard, of our Editorial staff, is most timely—in that all of our readers can refresh themselves on the true meaning and purposes of the Arboretum.

but also as a source of information to the public from the beginning gardener to the horticultural expert; and as a place of study for everyone from the Boy or Girl Scout striving for Merit Badges in nature study to the botany professor using it as a laboratory for his graduate students.

“What was the origin of our Arboretum?” For many years there had been dreams of an arboretum in the Pacific Northwest but it was not until January, 1935, that an agreement was actually consummated between the Board of Park Commissioners of the City of Seattle and the Board of Regents of the University of Washington which gave the University the right to use the 257 acres of the Washington Park area for the sole purpose of establishing an arboretum and botanical garden.

But it took far more than a formal agreement between the City and the University to make the Arboretum an actuality. It stands as an example of the miracles which can be wrought by the combined efforts of individuals, institutions, and government. These were difficult times. There was a depression and little money for such a project, but enthusiastic men and women formed the Arboretum Foundation to raise the necessary funds. Garden clubs rallied the forces of their members and gave generously that this dream of the future might become a reality of the present. The WPA put men to work contouring the land, making roads, draining marshy areas, and digging beds for the plants that were to come. The greenhouses were built, seeds were sown and cuttings were rooted to be set out in lath-houses and nurseries. And now, twenty years later, the American Association of Botanical Gardens and Arboreta calls our Arboretum “one of the foremost institutions of its kind in the world.”

“What is the Arboretum Foundation?” It is an organization of men and women who are so vitally interested in the Arboretum and in its future that they give countless hours of work and thousands of dollars to assist the Arboretum in its maintenance, in furthering

its program, and in extending its scope. Dr. Donald A. Wyman, in *The Arboreta and Botanical Gardens of North America*, says: “A very active and influential ‘Arboretum Foundation’ has been formed of private individuals interested in the development of this plant collection. This is not necessarily an innovation but is functioning so well that newly planned arboreta or botanical gardens could do well to study its methods of enlisting wide public support.”

In addition to giving the Arboretum financial support, the Foundation publishes the quarterly **ARBORETUM BULLETIN**, sponsors lectures, and creates an interest in the Arboretum by emphasizing its horticultural and educational facilities. The Foundation is now making plans for a Floral Hall to be used for shows, displays, and meetings by garden clubs, horticultural groups and Arboretum Units.

“What is an Arboretum Unit?” Units are made up of groups of five to fifty (or more) Foundation members. Unit membership gives the individual the opportunity of extending his or her interest in the Arboretum. That interest may be in gaining a knowledge of plant material, from its identification to its use in the garden; or it may be in voluntary support of Arboretum projects; it might take the form of service by weeding or acting as guides during tours of the Arboretum; by raising plants for the Fall plant sale, or by adding to and maintaining one particular collection of plants. Some units meet four times a year and others hold monthly meetings. We know of at least one group that met once a week, to study plant material, for more than two years.

A Unit Council, made up of representatives from each unit, meets four times a year in order that the units may be informed of Arboretum and Foundation activities. These meetings have been held in the Arboretum Clubhouse but it is fast becoming inadequate for the rapidly increasing numbers. There are, at this writing, 70 units, but by the time this is printed there will probably be several new ones.

"What can the Arboretum do for me?" The meaning of the Arboretum to the individual can best be shown by describing some of its functions.

It is growing an ever-increasing number of ornamental woody plants in order that home owners may become familiar with their names, their mature size and form, their ornamental value, and the proper methods of culture.

It is constantly introducing new plant material to the Pacific Northwest in order that home owners may have more varied and more beautiful gardens.

It is serving you by answering your many questions (there are literally thousands of phone calls each year) on problem plants, plant diseases, pruning, propagating, sources, identification, fertilizing, soils, and the right plant for that difficult situation.

It is adding to the horticultural, esthetic, and economic importance of the Pacific Northwest by introducing new plants, new methods, and a great deal of beauty, not only within its own confines but throughout the entire area.

This year we appreciate the services of the Arboretum even more than before. I doubt if there is a home owner in the Pacific Northwest who did not suffer some plant loss during November's bitter cold. It is from the Arboretum that we will be able to learn just what plants came through without much damage, or without any damage at all. There are such plants, and if you are determined to plan a completely hardy garden you can learn from the Arboretum just what your choice of plant material should be.

In planning a new planting or in buying a new shrub you can usually see the size, habit, and form of that particular plant in maturity by visiting the Arboretum. If they do not have a mature specimen of the species in which you are interested, the staff will search out the information for you from their excellent library.

The books of this fine library of horticul-

tural and botanical publications may be used by individuals, clubs or industry. Since there are few duplicates and since the staff uses these books in their work, they may not be taken away but there is a small room adjacent to the office which is usually available to those who would like to study.

There is a constantly growing collection of several hundred colored slides of plant material which may be borrowed by responsible clubs on adequate notice.

Cut specimens are supplied to garden clubs, horticultural groups and units — subject to availability—and here again advance notice is required.

"Why is the Arboretum important to the Pacific Northwest?" It is advertising the Pacific Northwest to the world. Its BULLETIN is sent to members from California to New York, as well as Hawaii, Canada, and nine foreign countries.

Its guestbook shows that during the past two years, we have had visitors from 42 of these United States, with Washington, D. C., Hawaii and Alaska, and from 11 foreign countries.

Seventy-five thousand sightseers are brought by bus to the Arboretum during the tourist season each year and unknown numbers come by private cars.

This Arboretum of ours is unusual because of the mild climate in this region. We can grow a wider variety of temperate zone plants in the Pacific Northwest than in any other part of the world, with the exception of parts of the British Isles.

The varied conditions found in the Arboretum acreage make it possible to give plants every situation from lakeshore habitat, through marshy bogs to dry banks on stony hillsides, in soils from heavy clay to light sand—a very unusual state of affairs in a relatively small area.

We have something to be proud of, something to work for, something to tell the rest of the world—

"This is OUR ARBORETUM."



Western White Pine

Pinus monticola Douglas

C. FRANK BROCKMAN

THIS tree may be readily recognized from the other three native pines of Washington, for its foliage is borne five in a "bundle," is soft and flexible and from two to four inches long. Only one other pine native to this state—the whitebark pine (*Pinus albicaulis*)—bears its needles five per "bundle"; but that is a tree of the upper mountain slopes, at or slightly below timberline, and its needles are stout and $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long. Of our two other native pines, lodgepole pine (*Pinus contorta*) bears its needles in "bundles" of two, while the needles of Ponderosa pine (*Pinus ponderosa*) are in threes.

Western white pine, although common in Western Washington, is not an abundant tree in this region, which is principally noted for its forests of Douglas fir, western hemlock, true firs, western red cedar, and Sitka spruce. In the Puget Sound region it grows from sea level to an elevation of about 5,000 feet. One may find it quite often in the vicinity of Seattle, but it is, perhaps, most typical on the slopes of the Cascades from 2,500 to 4,500 feet where its noteworthy associates are noble fir (*Abies procera*) and Alaska cedar (*Chamaecyparis nootkatensis*).

Geographically, the western white pine will be noted over a wide area—from southern British Columbia to the Southern California Sierra and eastward through the Inland Empire to northern Idaho and western Montana. In northern Idaho and on the west slope of the Rockies of western Montana it is an important timber species. Its wood is used for such purposes as matches, interior finish, sash and door frames and the like.



Trunk of old Western White Pine, 50 inches d. b. h., in Elwha River Valley, Olympic National Park, Washington.

(Fig. 1)

—PHOTO BY B. O. MULLIGAN

In youth the western white pine has a thin, smooth, gray-green bark and a relatively long crown, composed of branches which extend from the trunk in definite whorls. The trunk of mature specimens growing in the forest is a tall, slender shaft with a short crown and purplish-gray bark, a little more than one inch thick, which is characteristically broken up into numerous small rectangular blocks. It may be readily distinguished from its associates by this character since no other tree of this region has bark of that type (fig. 1). The cones, which average seven or eight inches in length, vary from 6 to 15 inches; they hang from near the ends of the branches, are short-stalked and the individual scales are without prickles at their ends. The cone scales of other native Washington pines are "armed" at the apex with a prickle or, in the case of the whitebark pine, a blunt point.

Western white pine may attain a height of as much as 100 feet and a diameter of three, or, exceptionally, four feet at maturity; maximum age may be 200 to 500 years.

Because of its beauty the western white pine is well adapted to landscape use but, unfortunately, it—like all our five-needed soft pines—is subject to white pine blister rust. This introduced fungus disease has destroyed millions of dollars worth of eastern white and sugar pine, as well as western white pine since the turn of the century. This disease cannot spread from pine to pine but requires the presence of currants or gooseberries (*Ribes*) to complete its life cycle. Total elimination of all currants and gooseberries in the vicinity of valuable commercial stands of western white pine is practical control but this is not feasible in areas where this species is not commercially important. For that reason western white pines about our homes are often infected and killed by this disease.

Ye Olde Herbals

MRS. O. B. THORGRIMSON*

WEBSTER'S definition of an herbal is "a book in which plants are named, described and often figured, usually with special reference to their officinal properties." The definition is perhaps more vividly expressed in the foreword found in Banckes Herbal of 1525. "Here begynnyth a newe mater, the which sheweth and treateth of ye vertues and propertyes of herbs, the which is called an Herball."

The study of plants and their uses has from remotest times engaged the attention of man and developed from two widely separated standpoints; the philosophical and the utilitarian. Botany as a branch of philosophy had its origin in that glorious period of Greek culture that produced such men of learning as Socrates, Galen, Plato and Aristotle.

Aristotle, a pupil of Plato, concerned himself with the whole field of natural science and bequeathed his library to Theophrastus, who was his ardent disciple and wrote the first great book on the subject entitled "The Inquiry into Plants." He lived from 374 to 287 B.C. His book was worked out in a very definite and concrete manner and was greatly in advance of his time. He mentions about four hundred and fifty plants.

His work did not entirely die out in the Dark Ages as it was used in the ninth century A.D. as the basis of an encyclopedia written by a German named Rhabanies Magnentius Maurus. Later in the thirteenth century the botanical writings of Albertus Magnus were based upon "The Inquiry." The works of Albertus were a great advance in many ways, especially in the classification of plants and the structure of certain flowers. He points out, for instance, that in a vine a tendril sometimes occurs in the place of a bunch of grapes and from this concludes that the tendril is to be interpreted as a bunch of grapes incom-

pletely developed. He also calls attention to the difference between thorns and prickles and realized the former are stem structures and the latter merely surface organs.

The men of this early age were not interested in plants as such, or in securing lists of species; rather they were concerned with the more philosophical subjects, such as, whether in the case of the material union of two, such as the ivy and its supporting tree, their souls were united. So it was left to the purely utilitarian study of medicine to really develop the subject of botany. From the very earliest times various plants had been used as healing agents, and the knowledge was handed by word of mouth from one generation to the next.

During the period of the Renaissance throughout Europe physic gardens were found within cloistered walls of the monasteries and from these gardens were dispensed a variety of medicinal herbs in an effort on the part of monks to alleviate the suffering and distress of their people. It was an era when the enjoyment of plants for their beauty alone, while not entirely forgotten, was at least secondary to their practical uses. People were generally interested in growing plants that were used for medicinal purposes or as flavoring in cooking or as a source of color for dyeing of materials, and, in some cases, for fragrance alone.

An intimate knowledge of such plants throughout the countryside is evidenced by the wealth of plant names in most European languages and the superstitions and folklore regarding many plants were passed on from generation to generation.

As time went on, written records began to replace oral tradition. The earliest European work of this sort is the famous "Materia Medica" written by Dioscorides, who lived in the first century A.D. when Nero and Vespasian flourished. Legend has it he was physi-

*Mrs. Thorgrimson, of our Editorial staff, brings us another of her most interesting articles.

cian to Anthony and Cleopatra. He was a native of Asia Minor but traveled widely. In his book he describes about five hundred plants and their uses as applied to human ailments. All the later herbals quote him freely, particularly when describing the virtues of the various plants. There is a famous manuscript of Dioscorides in Vienna made for Julianā, daughter of Emperor Flaviūs. She lived in the reign of Justinian, about the sixth century A.D., and was an ardent Christian. The manuscript bears her name and is beautifully illustrated.

Botany owes a great debt to medicine and also to certain of the fine arts, more especially wood engraving. The work of these artists was often more accurate and revealing than that of the less observing author. A very early work based upon the classical writings of Dioscorides and Pliny was the "Herbarium of Apulius Platonicus." I mention this little Latin work as it was among the very first to receive the name of "Herbal." Four early printed editions of this herbal are known; the earliest was published in Rome late in the fifteenth century. Apulius Platonicus' book was very freely illustrated; in case the herb was supposed to have the power of healing a bite or sting, the scorpion or snake was shown with the drawing of the plant.

Coming down to the end of the fifteenth century we find the work of Bartholomaeus Anglicus, an Englishman who spent the greater part of his life in France and Saxony. He was considered one of the greatest theologians of his day and was the author of "Liber de proprietatibus rerum" (about 1470) which consisted of nineteen volumes on the general subject of Natural History, the seventeenth of which dealt with herbs and their uses and is full of references to classical writers on herbs—Dioscorides, Galen and Aristotle—and is the only original treatise on herbs written by an Englishman during the Middle Ages. His descriptions of the plants themselves are original and charming. For example, of the lily he says "The Lely is an herbe wyth a whyte floure

and though the levys of the floure be whyte yet whyhin shyneth the lykeness of golde." In describing the unfolding of the rose, "and when they (the petals) ben full growen they spread thymselfes ayenst the sonne rysyng."

His book on herbs ends with, "and here we shall fynysshe and end in treatyry of the XVII book whyche hath treated as ye may openly know of such thynges as the maker of all thyng has ordered and brought forth by his mighty power to embelyssh and araye the earth wyth and most specyally for ye fods of man and beast."

The first herbal printed in England—the Bankes Herbal—was a small quarto volume without illustrations and was issued in 1525. On the last page of this work are these words, "Imprynted by me, Rycharde Bankes dwellinge in London, a lytel fro ye Stockes in ye Poultry." The author of this book is not known and it has been suggested that it is based on some mediaeval manuscript now lost. It became popular and the following year another edition was issued and during the next thirty years various London printers issued the same book under different titles. This work seems to have been a labor of love and the descriptions show a keen appreciation of the beauty as well as the usefulness of the herbs described. One of the most charming is the list of twelve virtues of the rosemary. Space does not permit all of them to be quoted, but here are a few:

"Take the floures thereof and make a powder therof and binde it to they right arm in a linnen cloath and it shall make thee light and merrie.

"Take the floures and put them in thy chest amoneg thy clothes or amoneg thy booke and moths shall not destroy them.

"Also boyle the leves in whyte wyne and wasshe they face therwith—thou shall have a fayre face. Also put the leves under thy beddes head and tho shalbe delyvered of all evyll dremes. Also if thou be feeble boyle the leves in cleane water and wash thyself and thou shalt wax shiny. And if thou have a cough drink the water of the leves boyled in

whyte wyne and ye shall be whole."

The most desirable edition of this herbal is that printed by Wm. Copland, in which appear the additional chapters on "The Virtues of Waters Stylled," "The tyme of gathering of sedes," and "A general rule of all maner of herbes."

The most famous of the early printed herbals was "The Grete Herbal" published in 1526, (just a year later than the Banckes Herbal), and again in 1529, printed by Peter Treveris. It was a translation from the French and was illustrated, although these woodcuts were considered well done. What are thought of as 20th century foibles were given full attention, such as a cure for baldness, recipes for hair dyes and stains for the finger nails.

The Grete Herbal was alphabetically arranged, for the idea of the natural relationship of plants was unknown at that time. Quite a number of medicines enumerated are still used in modern practice; licorice for coughs, laudanum, henbane, opium and lettuce as narcotics; olive oil and slaked lime for scalds; cuttlefish bone for whitening the teeth, and borax and rose water for the complexion. Mankind was warned against fungi. "Fungi ben musherons. There be two maners of them, one maner is deadly and sleeth them that eat of them, and the other dooth not."

A very dim view was taken of our most commonplace habits. Quoting Galen as an authority we learn "many folks that bathed in cold water have dyed ere they came home." Drinking water seems to have been thought equally pernicious, as we are told "Mayster Isaac sayeth that it is impossible for them that drynketh over moche water in their youth to come to ye aege that God ordeyneth them."

An indication of the method of settling differences among individuals by strong-arm tactics is reflected in the various remedies proposed for such afflictions as "blackenesse and bruisinge comynge of strykes, especially if they be in the face."

The whole matter is summed up in the conclusion, "O ye worthy reders or practicyers to

whom this noble volume is present I beseche you to take intellygence and behold ye works and operacyons of Almighty God which hath endewed his symple creature mankynde with the graces of ye Holy Goost, to have parfyte knowledge and understanding of the vertue of all maner of herbs and trees in this booke comprehendyed."

Wm. Turner, commonly known as the father of botany, was also a physician and a divine. He was born in the reign of Henry VIII and was educated at Cambridge. It was in the days of the Reformation that he traveled preaching in various places. For this he was imprisoned, and, when released after a stormy career, he left England and traveled in Italy, Germany and Holland. He was the first to study plants scientifically and his herbal marks the beginning of the science of botany in England. He impressed his personality upon his books and these show him to be a man of caustic wit and independent thought. His first botanical work "Libellus de re herbaria novus" is particularly interesting because it is the first in which localities of native British plants are given. He also wrote about birds and gave information about English fish to Gesner's "Historia Animalium." The first part of his herbal was published in London in 1551, the second part in 1561 in Cologne. All told, there were three small volumes. One of the most attractive features of this herbal is the number of beautiful woodcuts. A few were specially drawn and cut, but the great majority are reproductions of the exquisite drawings of the Fuchs Herbal. This Herbal appeared in 1542, and was printed in Latin in Basle under the title of "De Historia stirpium," dealing with about four hundred fifty plants. Fuchs was a physician and teacher and

(Continued on Page 34)

Photograph of one of five original water colors by Mrs. Hazel Thelen which were purchased by the Arboretum Units and will be hung in Floral Hall.

(Fig. 2)

—PHOTO BY DON NORMARK

ARBORETUM SPOTLIGHT

Rhododendron sutchuenense var. *Geraldii*

ONE of the most rewarding sights in the Arboretum this spring will be the flowering of a group of Szechuan rhododendrons on the south bank of Rhododendron Glen. These relatives of *R. calophytum* and *R. Fortunei* are among the finest of foliage plants, with their long, glossy green leaves, but it remains for March or early April to bring out the full glory of this Western Chinese species. Then they deck themselves with countless trusses of rosy-lilac flowers, each with a blotch of crimson in the throat, which differentiates them from the type *R. sutchuenense*.

When in full flower the plants have a suggestion of their Chinese origin about them, due probably to the manner in which the

flower trusses are arranged in layers, each higher layer being set back from its lower neighbor, quite reminiscent of a squat Chinese pagoda.

Our plants were acquired from Mr. Charles O. Dexter in 1937 and are now eight to ten feet high and some twelve or more feet across, which is about the maximum size reported for the species. They have proved remarkably hardy—weathering last November's cold with hardly a lost flower bud.

No wonder that the late W. J. Bean said: "This species, which flowers when quite small, is one of the finest and most striking of Chinese rhododendrons."

JOSEPH A. WITT



Rhododendron sutchuenense var. *Geraldii*

Winter Aspects—January, 1955

ELSE M. FRYE*

SOMETIMES in summer stranger-visitors who do not know what I am trying to do make a bald pronouncement: "You do not have any flowers." It is true that at that time of year I do not have many; at other times I have so many that it is a weariness—I sometimes wish that rhododendrons did not bloom so prodigiously. As they collapse, each cluster has to be removed and sometimes fought for with the bees.

In winter there are many things to look at. When I have an open space to fill I select something which will grow into it and be in correct association with the surrounding plants as to height, foliage pattern and texture, color and, lastly, that from some window it will be a satisfying picture. Please do not think that I do not realize that I often miss it and have to re-arrange, which I do and have great fun doing.

In buying a shrub I do not think too much of the bloom. I make sure it is shapely, well branched from the base and with a good and healthy root system. If there is a branch or two so low that it can be layered so much the better.

In shaping we can do a great deal ourselves by proper pruning; maybe pulling back branches and anchoring them or even spreading them. I have been told of a famous landscapist who, when he went into a strange locality, liked to spend a week or more studying and getting the feel of the surrounding country. I have tried to adopt that attitude—to think first of the native growth I had to start with and that I have been able to bring in, and then the exotic things that will fit in with them naturally. I have refused, but gratefully, many kind offers of plant material that would be

foreign and conspicuously out of key with what I have.

Now, to take you around to some of the windows of our house. From my bedroom I look out at the greenhouse and there I have a planting that is not good, at one corner a big *Viburnum fragrans*; it was put there deliberately so I could enjoy the pink flower-clusters that come from November to March. It really needs a green background. The other shrubs in this planting have no relation to it or each other. A yellow-green *Osmanthus armatus* with *Phillyrea angustifolia* in the foreground. They were put there for a reason—to cut down the starkness of the greenhouse as it is approached from the driveway. It also cuts down the usable space in the greenhouse—I cannot have things both coming and going; a choice has to be made. In between there is *Senecio Greyi* and *Cistus* "Doris Hibberson" with *Dianthus* in front. (In summer of 1955 this planting was changed to something more satisfying.)

At the base there is a drift of *Helleborus orientalis*, pink to maroon; when they bloom together I am grateful.

From the bathroom window one of my favorite shrubs is so alive with vitality and color that it glows. It is *Elaeagnus pungens aurea*. It has to be watched to see that it does not revert to its green state; whenever such a branch appears I cut it as soon as I see it. Near by is the dark and shiny green of the tea plant, *Thea sinensis*. The two most conspicuous plants from size standpoint are a pink dogwood and *Magnolia conspicua*. I love the dogwood when it stands bare in winter—branches and buds are covered with a gray and rose-lavender bloom. The magnolia has an interesting branching habit and the buds are yellow hairy. This planting would really be prettier without the dogwood but I can't make up my mind to eliminate it—it is the only tree I ever budded; my father stood over me and showed me how to do it. (In the sum-

*Although written more than a year ago and many of the shrubs mentioned have since then been killed or seriously damaged by the cold weather of November 1955, we feel that Mrs. Frye's descriptions and suggestions are too valuable to leave unpublished. Time will heal many of the wounds in our gardens and young plants replace those lost.

mer of 1955 this planting was improved; it took all the might and main of my husband and myself to pull the magnolia back against a fir tree so that it almost seems as if it climbed against it. And the jungle behind the magnolia and the dogwood has been cleared out so these two important plants stand out more conspicuously). In the foreground are small shrubs such as *Ilex crenata convexa*; small rhododendrons; *Menziesia pilosa*; *Vaccinium Vitis-idaea*; a white-flowered *Daboecia cantabrica*. The crumpled green foliage of *Primula Juliae* hybrids is just beginning to show through.

From the living room window we look directly into the woodland path, a tall cedar dominating the area. We harvest all dropping pine needles to put a real woodland floor on the path, cinnamon brown and springy under foot. Against a dark green background, mostly rhododendron species, *Hydrangea quercifolia* stands out. This I am proposing moving forward to allow it to set its flowers as well as to brighten its fall color. In this area also is a *Symplocos paniculata*, a small tree with white flowers and lapis-lazuli fruits. This is the time of year to determine about its pruning; it is apt to produce a confusion of twigs—not pretty. In this area I also had a wonderfully floriferous quince, pale copper color maybe describes it best. But when my neighbor planted a row of red flowering currant, blooming at the same time and which I saw over its top, the effect was so sickening that I moved the quince. With the cedar as a backdrop, a great clump of yellow-stemmed Forsythia pops up with evergreens in the foreground. Among them are *Osmanthus Delavayi*, very dark green and soon to bloom; *Pieris japonica crispa*, a bright and shining green. It is under this cedar that we have the choicest small things; various *Gaultherias*; *G. cuneata*; *G. nummularioides*; *G. antipoda*; *G. perplexa*; *G. depressa*; *G. Itoana*; cyclamen; *Shortia*; *Schizocodon*; blue *Hepatica*; the tiny *Trillium nivale*; Mr. Carl English's small maidenhair fern. A "reconstructed" cedar log supports a planting of *Polypodium Scouleri* with *Selaginella Douglasii* and *Mitchella repens* creep-

ing in and out among the stems.

Then we look into the meadow. Just now it is rusty brown with deciduous ferns and spikes of *Astilbe* and a copper-colored covering of *Epimedium 'Rose Queen'*. They, together with a foreground planting of *Helleborus niger* and *Leucothoe Catesbaei* and small rhododendrons, give color to the area at this season. If I cut away the old growth too hastily in the urgency of "cleaning up" I should lose this.

Across the creek the trunks of trees make a rhythmic pattern against the hill which is almost like a chant. And all over the ground is the soft brown velvet of collapsed brake-ferns. A tall cedar is an accent, the branches often in the angry, hurrying, destructive water.

On this side of the creek and to the left under a group of small firs I have to look into the future, for among the ferns and *Helleborus* are my cuttings of *Aucuba* and *Skimmia*. In time they will make a wonderful picture. Near by a planting of *Cotoneaster bullata* var. is laden with dark red fruit and in front the red stems of *Cornus alba sibirica* are bright.

Coming up this side, the tamarack, swamp oak and cherries add to the feeling of forest. The branching pattern is beautiful. Sweeping out from under this is the heather "moor" with azaleas popping up here and there and passing into a wide and handsome carpet of *Gaultheria Miquelian*, the foliage always green and in fall bearing a good crop of first pink and then white fruit—a definite attraction to birds.

Directly in front of the house is shining Oregon grape, *Viburnum Davidii*, many rhododendrons—especially *R. racemosum* and *R. ledoides*, *Kalmia latifolia*, the foreground of *Vaccinium Vitis-idaea* and *Calluna vulgaris 'Mrs. Pat'*, the branches soon to be flaunting rosy tips. Very soon the big Whitcomb cherry in the angle of the porch will begin to glow with life; the branches then take on a warm rose to red color. Across from this in the border is *Euonymus europaeus*, its gorgeous fruit now crumpled and dropping.

Then a window framed in apple green shows an upright *Cotoneaster Henryana*, the branches dripping with fruit; it is beautiful, bountiful

and gorgeous. From a dining room window *Stewartia koreana* is a warm coffee color and full of pointed buds, promise of living green rather than bloom. I like to remember it in fall—the most spectacular, glorious colors in the garden.

From the breakfast table window the scene is dominated by two firs and a pine, a cedar and an ancient dogwood. On the house side the firs and the pine were mutilated by having other trees too close to them and too close to the house, so they had to be cut out, leaving ugly bare sides. To cover up their nakedness, two large Pink Pearl rhododendrons have been planted against their boles. The immediate foreground is the tall shining Oregon grape, the low *Mahonia nervosa*, Salal and sword fern—all merging into more exotic plantings at both ends. At the moment the earlier of the two witch hazels is showing the beginning of sharp yellow. One of my favorite shrubs, *Photinia villosa*, throws its branches across the window; the flowers are small and cherry-like, the fruit abundant and scarlet. The spring foliage is pinkish, turning in fall to all the shades of yellow and scarlet. Just now the skeleton plant is very interesting—my pruning shears keep it so. When Mr. E. H. M. Cox was here he thought the *Mahonia*, in fruit at that time, downright exciting and one of the most valuable shrubby plants of the region.

From the kitchen door window I look back into the field, surrounded by native evergreen trees. One of the oaks is still holding its leaves; it does not always do this. Sometimes it is one of the other oaks. A red osier dogwood that in summer has yellow leaves now exhibits crimson branches. The field is a rather unkempt looking place while it is moving into growth, so last summer (1955) we shut off the immediate view with two large native rhododendrons and small suitable shrubs and tied the whole into the paving with low ground-covers.

When I look immediately down from the kitchen door window I see a small cover of *Rhododendron camtschaticum*. I can then imagine the seaboard edge of the peninsula—

the wild, beautiful magenta color of the flowers competing for light with the pale green of the foliage. Here also I have *Raphiolepis ovata*, one of the most beautiful foliage plants that I know. And a rhododendron cross that just happened in my old garden. The mother plant was *R. orbiculare*. It produces beautiful, very large leaves, a grayed green. Over this planting floats a lovely pattern of the high bush cranberry.

As I step down to the left the foreground planting is *Gaulthettya wisleyensis*, burdened with dark crimson fruit, small rhododendrons and pernettyas with fruit of waxy white and pink and red. Curiously the birds are not attracted to these fruits so we have them till spring. The tall plant here is *Stewartia pseudocamellia*. As I look back to the chimney planting, the border of an ivy, the leaves more creamy-white than green and heart-shaped, looks clean and almost as if it were in bloom. In front of the small patio is a row of sturdy *Rhododendron* 'Bow Bells,' the leaves crisp and the plants full of the promise of buds.

When there is time I like to saunter down the driveway, the wide bed that fronts it contains some of my choicest plants—the foliage alone gives me a wonderful lift—the bold *Daphne retusa* and *Daphne sericea* in groups; a spread of *Rhododendron racemosum*, Forrest's 19404—the stems glowing and the buds pink and rose. *Skimmia Reevesiana* (*Fortunei*) still holds its scarlet fruits; there are some dwarf large-leaved rhododendrons and *Viburnum Davidii* for boldness. *Vaccinium ovatum* and its nearly related *Vaccinium floribundum* (*Mortinia*) are among the plants I like best, though a little later in the season they become more beautiful with the rising of the sap. *Ceanothus gloriosus* invades the ground wherever there is room; its oval leaves are bright green, leathery and toothed. A small foliaged *Veronica Astonii* inserts a touch of olive green. *Leucothoe Catesbaei* and *Photinia glabra* flaunt red foliage, matching the stems of the beautiful and rather rare *Arctostaphylos nummularia*.

The bed across the driveway is dominated
(Continued on Page 31)

Conspicuous Beach Plants of the Puget Sound Area

MRS. JAMES P. ROBERTSON*

SINCE there are about eleven hundred miles of shore line on Puget Sound there is ample room for variety of its flora. Prof. Piper calls the Puget Sound area the Vancouver Strip. Its beaches have flowers often unlike the ocean beaches. The Strip can be divided into salt or brackish marshes and sandy beaches. The flowering plants on these are of special interest.

The plants that thrive in brackish or salty marshes usually taste of salt. Since water moves from greater to less volume the plant must be saltier than the water in order to get sufficient water.

Salt grass is often the most abundant plant in such an area. It is erect, rigid, smooth, with leaves in two rows as the Greek name *Distichlis* indicates. It grows from a creeping base, is salt to the taste, and cattle will not touch it.

There are two members of the goosefoot family that thrive in a salt water bog. Glasswort (*Salicornia ambigua*) or salthorn is one. It has a succulent jointed stem with fleshy, stiff, opposite branches and no leaves. It is fleshy and leafless because it cannot afford to let any water evaporate. Plants accommodate to dry places in two ways; they become fleshy like the cactus or they learn to get along without water like the sagebrush. Salthorn has three flowers in the hollow of its thick upper joint. The fleshy joints are used for pickles. It is sometimes infested with a dodder (*Cuscuta squamigera*), a leafless annual herb which twines and is parasitic.

The other member of the goosefoot family is saltbush (*Atriplex littoralis*), a decumbent plant with small, greenish flowers in terminal panicles.

Jaumea grows in salt marshes. It is a composite with somewhat fleshy opposite leaves and solitary heads of yellow flowers. The

stems ascend to a height of 1 to 2 feet.

One member of the Figwort family is common in brackish marshes. *Orthocarpus castilleoides* is like an Indian Paint Brush. It is branched from the base and decumbent. The leaves are lanceolate and cut into narrow lobes. The flowers are in a dense short spike with white-tipped bracts and whitish corolla.

The sandy beach produces many interesting flowers. Probably the best known is the yellow sand verbena, *Abronia latifolia*. It belongs to the Four o'Clock family. If it were a real verbena it would have a complete flower, but the Four o'Clock family have no petals, the calyx being petaloid. The plant is prostrate and sticky. The leaves are kidney shape and the flowers are bright yellow. Hogs and cows like the leaves.

Another low beach plant belongs to the Umbelliferae family, *Glehnia leiocarpa*. The leaves are thick and densely white-hairy beneath. The flowers are whitish and in umbels. The leaves are twice ternate and then pinnate.

There are two members of the composite family on the beaches; Gum-weed (*Grindelia stricta*) is erect, sticky, with yellow flowers. It was named for Grindel, a Russian botanist. It grows to a height of 2½ to 4 feet. It is a biennial or perennial.

Another composite, though a prostrate one, is Sandbur (*Franseria Chamissonis (bipinnatifida)*). The stems have a milky juice and are 4 feet long. The leaves, once or twice pinnatifid, are alternate. The sterile heads of flowers are separated from the fertile ones. The staminate heads are in dense racemes; the pistillate are small in the axils.

The beach pea is common on our beaches, *Lathyrus maritimus*. It is a decumbent plant with purple flowers. The green seeds are sometimes eaten like green peas.

Also in the Leguminosae family are two lupins. *L. microcarpus* is an annual with stems 1 to 2½ feet high. The leaves are basal mostly

(Continued on Page 30)

*Mrs. Robertson was one of the first Foundation members and is also a member of the Seattle Garden Club.

Fruits For Western Washington Suburban Gardens

ARTHUR S. MYHRE*

SMALL FRUITS and tree fruits contribute greatly to the pleasure of gardening and should be a welcome addition to the home garden. Home gardeners in Western Washington suburban areas have a fine opportunity to grow high quality fruit to suit their personal taste for eating fresh, as well as for canning and freezing.

Many decades ago practically every home had its fruit garden with no thought of selling the fruit. Their main reason for existence was to supply the family with good fruit in continuous succession throughout the year. When visitors dropped in for the afternoon or evening the host took a keen pleasure in serving the home-grown product. This spirit of hospitality was a pleasing custom of those days. During recent years, amateur fruit growing has shown promise of regaining some of its former popularity.

Lack of understanding of variety adaptation to our climate, cultural requirements and control of insects and diseases have given home gardeners unhappy experiences with fruit production and have led many of them to give up the idea of growing fruit. Specific, helpful recommendations on these matters are obtainable from county extension offices. With the use of this information, conscientious gardeners will find fruit-growing very interesting and that it requires little more care than their ornamentals.

Some factors to consider in planning your fruit garden:

1. Do not establish so many that you are unable to take care of them properly. Remember you must devote some time to pruning, watering, fertilizing and controlling pests and diseases.

*This paper was contributed by Mr. Myhre of the Western Washington Experiment Station, Puyallup, Wash., to the meeting of the Western Washington Horticultural Association held January 6, 1956, at Puyallup, Wash.

We would welcome comments from our fruit growing readers on their experiences with the varieties suggested, or any others.

2. Since the fruit garden is a long-term investment, a small initial outlay for spray material and equipment is necessary and worthwhile.
3. Will it grow where you live? Plant what is recommended for your area.
4. Usually the home gardener must use the site he has, regardless if all conditions are favorable. If you have a choice, select a spot with good natural air drainage and water drainage. Tree fruits and small fruits will not grow well in competition with shade trees so consider neighboring property. Walls and sides of buildings can often be utilized as special sites because of the protection they offer with greater heat reflection and radiation.
5. In order to bear fruit, some varieties of certain kinds of fruits must have pollen from another variety. All sweet cherries, certain varieties of plums and pears and some apples have pollination difficulties. Most are insect-pollinated and the honey bee is the most dependable. This may be a handicap in highly developed areas.
6. Consider the family's taste. Give most space to fruits you like best. Plan your garden with harvest dates in mind if you like fresh fruit over a long period.

Dwarf Fruit Trees

Many suburban gardens are small to begin with and several full-sized standard trees are just too big. A way to solve this problem is to plant dwarf fruit trees. There are some disadvantages in growing them but, nevertheless, varieties grafted on dwarf rootstock have a definite place in the fruit garden.

Advantages

1. Pruning, spraying, thinning and harvesting operations are easier.
2. Come into bearing at an early age.
3. Take up less room. Greater choice of varieties can be grown in a limited area.
4. Can be used to beautify grounds.

Disadvantages

1. Cost of trees greater.
2. Some dwarf rootstocks have shallow, weak root systems so staking is necessary. Trees may suffer more from drought and are more easily uprooted by winds than standard trees.

Apples, and to a certain extent, pears, are the fruits most successfully dwarfed. Present dwarfing rootstocks for peaches, plums and cherries have not been suitable. A "dwarfed" cherry, for example, is still a big tree.

It is possible to obtain different degrees of dwarfing by grafting or budding apple varieties on certain Malling rootstocks which were developed at the East Malling Research Station in England. Malling IX has been most successful in producing real dwarf trees. Most varieties when grafted to it grow not much taller than 10 to 12 feet. Where space is less limited semi-dwarf trees, which grow perhaps twice as tall as the real dwarf, may be more desirable. Malling VII rootstock has been used successfully for this purpose.

Recommended varieties for home gardens:

Apples

Yellow Transparent, still one of the best extra early apples for this area, excellent for cooking and acceptable for dessert, reliable yields.

Melba, ripens August-September, fine for eating fresh as well as cooking; good flavor; trees bear young and regularly.

Red Gravenstein, late summer-early fall, unexcelled for eating fresh and cooking; slow in bearing but quite productive and reliable when it comes into full bearing; highly recommended.

King, late fall-early winter, good quality for either dessert and cooking uses, begins to lose flavor by mid-winter.

Golden Delicious, late fall-early winter, excellent flavor, excellent for eating and cooking, good yields, bears at an early age, highly recommended.

Pears

Bartlett, common but still popular and recommended for canning, has great adaptability to soil and climate, good but not the best qual-

ity, very fruitful year after year, ripens September.

Comice, fruit ripens winter, thrives well here, high quality, very juicy and sweet.

Bosc, fruit ripens winter, has good characteristics in all respects, fruit beautifully russeted, good dessert quality, bears well and regularly.

Peaches

Easily grown, bears early, very attractive in bloom. Strictly adhere to spray schedule for control of peach leaf curl and brown rot. Several varieties with different ripening dates can be budded on same tree if your garden is small.

Pacific Gold or *Rochester*, ripens mid-August, attractive, good dessert quality, slightly clingy, somewhat soft and stringy when canned.

Redhaven, ripens early August, very attractive, beautiful color, good quality, slightly clingy, slow in bearing, good for home canning.

Veteran, generally ripens early September, good quality, best peach in this area for canning, bears early, nearly freestone.

Plums

Beauty, Japanese plum, ripens late summer, partially self-fruitful, medium size, crimson skin, amber flesh color, eating fresh, good flavor.

Duarte, Japanese plum, ripens early fall, self-unfruitful, large, dark red skin and flesh color, eating fresh, good flavor.

Methley, Japanese plum, late summer ripening, self-fruitful, small, purple skin, red flesh color, eating fresh, good flavor.

Italian Prune, European plum, ripens late summer, self-fruitful, good for cooking, canning, eating fresh.

Sour Cherry

Montmorency, easy to grow, ripens late summer, good for canning and freezing.

Strawberries

Northwest, single crop variety, has a high degree of virus tolerance, prolific plant maker, ripens one week later than Marshall, very productive, berries generally long-conic shape, large-medium size, glossy, bright crimson color,

(Continued on Page 32)

Lilacs

SALLY BUNGE*

*It is the season now to go
About the country; high and low
Among the lilacs; hand in hand
And two by two in fairy land.*

ROBERT LOUIS STEVENSON

LILACS, flowers of romance, dear to memory. Their haunting fragrance fills us with a warm nostalgia as does no other scent. City dwellers without gardens are aware of roses, violets and all of the other flowers, but when lilac time arrives in Paris, Boston, Rochester, New York, Swarthmore, or wherever large collections of lilacs are grown, and where the public may visit them, people go in large numbers to enjoy them. In Spokane at lilac time a celebration called the "Lilac Festival" is held. Parades with a queen, bands and much fanfare greet the annual feast of fragrance and color. In the Puget Sound area for some years the Roy S. Leightons had a fine lilac nursery. Here the best varieties, running a superb line of colors, and an excellent example of good plant husbandry, was a mecca for gardeners over a large area. When the Leightons felt obliged to give up the commercial growing of lilacs much regret was felt. It is hoped that the Arboretum of the University of Washington can soon add a collection of lilacs to the other notable groups of outstanding plants.

This spring we will be conscious of the hardiness of lilacs. When the killing freeze in November wrought so much damage, lilacs did not change from their seasonal pattern. They completed their defoliation and went into their winter dormant season earlier than is their custom in this area, and forgot the whole thing. Now, as this is written in mid-January, the buds are swelling a little, and it is the hope of one enthusiast that the longer

* Mrs. Frederick A. Bunge's own lilac collection is a matter of pride to all who have seen the fine specimens she has had on display at many Garden Clubs and Unit groups. It is hoped we may some day have a lilac collection in the Arboretum worthy of her joy in these delightful plants.

dormant period might have been of benefit! It was the opinion of Lemoine, noted plant breeder of Nancy, France, that the dry summers and cold winters in Canada and the U.S. would encourage the development of fine lilacs, not only in the richness of bloom, but in the depth of fragrance.

As to longevity we do not yet know how long a lilac plant will live. There are some in the United States that are known to have lived without much care for over one hundred years. They may well last out another century. We have not had time enough to find out.

Botanically, lilacs are of the family *Oleaceae*, genus *Syringa*. There are many beautiful relatives of the lilac in this family, among them *Forsythia*, *Phillyrea*, *Osmanthus*, *Chimonanthus* and *Jasmine*. In addition to these are two others, *Fraxinus* (Ash) and *Ligustrum* (Privet). Propagators of lilacs sometimes use privet and ash as understock for grafting lilacs in order to get large plants quickly. It is not a good practice. Lilacs, particularly, do best on their own roots.

The distribution of lilacs, so far as is known, in Southeast Europe is from Hungary to Yugoslavia through to Greece. But of the twenty-eight known species, the great majority are from that country of floral treasures, China. The species will not, in the main, be described here, although some of them have great beauty and appeal. They have been used by plant breeders to increase size of plants, hardiness, length of raceme, et cetera. But many are coarse in texture and best suited for background planting. Some are earlier to bloom than the French hybrids, and some are much later. A collector of both hybrids and species could have three months of lilac bloom. Some of the species do not have fragrance. Some have scent that we do not associate with lilacs.

One species that is worthy of a place in any garden is from Kansu, Northwest China. It is

Syringa Potanini. Its leaves are rather small, it has salmon-red buds and well-filled trusses of exquisite pale-pink florets. It has daintiness in appearance and is very fragrant—its perfume is that of jasmine! It blooms at about the same time as the hybrids, and has a second blooming period in September; but not with the same prodigality of blossoms.

The species that is a parent plant of all the French hybrids is *Syringa vulgaris*, the common lilac. It is the one with which we are all familiar, the lilac of our ancestors, and is still widely planted. It has a white form as well as the lilac-colored one, is a native of Southeastern Europe and was introduced into Central and Western European gardens by an ambassador in Turkey, Busbeke, in 1563. But it was not until three centuries later that hybridizers began their program of breeding that was to give us the beauties that now adorn our gardens. The breeders were from Belgium, Germany and France, the great majority being from France, especially from the house of Lemoine. His hybrids are legion, and those which he chose to propagate and to name have a very high standard of excellence. Some have been on the market since 1876.

Another breeder from France, Baltet, introduced his hybrid, "Lucie Baltet," in 1882. Morel gave us "Mme. Francisque Morel" in 1892. Miss Isabella Preston of the Department of Agriculture in Ottawa, Canada, has produced many hardy hybrids, using various species. John Dunbar in the U. S. produced "President Lincoln," a Wedgwood blue. Have-meyer has bred some outstanding hybrids, not all of which are yet in commerce. Clarke of San Jose, Calif., is offering, among some notable hybrids, a lilac with blooms of such a deep cream color that it approaches yellow. In our own state we have had some fine hybrids that were the work of Hulda Klager of Woodland, Wash. Unfortunately, the flood of 1948 washed out much of the result of many years of painstaking and successful work.

While the common lilac takes a number of years to produce flowers, the hybrids on the contrary flower at a young age and while they are still low in stature, sometimes only 16 to 18 inches in height. The flowers are freely produced, but the first year of bloom is not to be compared with what the plants will show later. It takes a season or two for them to get "squared away" for their best effect and after that each year will produce more and more beautiful bloom.

Lilacs are happy, healthy plants, requiring only good ordinary garden soil and practice. They need sunshine and good drainage. They enjoy a breezy, even a windy location. They like a heavy clay loam, but will flourish in sandy loam, too. In planting be sure that the soil is very firmly packed around the roots. Add a reasonable amount of humus and bone meal in the planting bed. Remember, they expect to remain there perhaps a century. The December after planting, top dress them with a sprinkling of ground lime-rock or dolomite, and repeat this treatment at the same time each year. In February fertilize lightly with a complete fertilizer, high in phosphorus, with at least four per cent of potash, and six per cent is better. Supply water if it does not rain in the period when the buds and blossoms are growing. They will not require any artificial water in summer unless the soil is very light. Cultivate thoroughly once during early summer after blooming. Grafted plants often die back due to fungus entering at the line of graft. Since sprays cannot reach this area, get rid of the plant. Sometimes lack of drainage will produce die-back, too. When you dig the offending plant out, check to see if this may be the reason.

Lilacs have few diseases or pests, but one is leaf miner. It is a tiny grub which is hatched from eggs underneath the leaf and eats the substance between the layers, making it hard to eliminate. Pick off as many of the most badly infected leaves as you can. Spray with lead arsenate with a good spreader so that the contact will be held. Finally, since the grub

pupates in the ground beneath the plants, clean cultivation will destroy many of them.

Lilacs have a wide range of enchanting colors. Still greater variation is produced by the buds, which may be darker, or almost another color. That is, an almost blue lilac may have a rose-colored bud, adding to the richness of the effect. Some of the semi-doubles and doubles have this color variation in the florets themselves. There is a variety in the shape of the trusses, too, and in the shades of green in the foliage of the different sorts. All of these combinations seem exactly right. Some have more perfume than others, warm days will enhance the scent of all of them. The odor of lilacs on a warm spring day following a shower is too delicious to describe.

Do buy own root plants, so labeled. Thereafter any sucker may be considered a dividend, as it will be exactly like the parent plant. Prune spent flowers as soon as the flowering is past. Cut the old bloom from the V formed by the two small branches on either side of it. They are the branches which will bloom next year, and it is better to enjoy the flowers on the plants for a year or so, as cutting the branches will deprive you of the following year's bloom. Later, when the plants have achieved considerable size, use longer branches for cut flowers. Finally, when the trees become too tall to enjoy, saw off one of the stalks to within 16 inches from the ground, leaving the stub for the nucleus for new growth to sprout out. Repeat this procedure every year or two until the plant is again eye height, and has much new wood, which always produces the best bloom. If you cut the tree too drastically, or too fast, you will have to wait two or three years with no flowers.

In planting, mix the pinks and blues—one deepens and enhances the other. Place the deepest purples next to the snowiest, most dazzling whites for the same reason.

Following is a short list of the varieties known and enjoyed by the writer. It is only a few of those available, but these are easy to obtain. If you become a true lilac connoisseur

you can seek out many other rare and exotic varieties not easily come by, but which will give you pleasure beyond words.

SINGLE VARIETIES

Blue, Bluish Lavender

PRESIDENT LINCOLN (Dunbar, 1916),

Wedgwood blue, small florets, large truss.

DECAISNE (Lemoine, 1910), Florets aster blue with contrasting purplish buds. A prolific bloomer, blooms very young. Large truss. Fine.

PRISCILLA (Havemeyer, 1944), Big showy upright spikes, imperial purple with bright golden centers. Very fragrant. New.

DE MIRIBEL (Lemoine, 1903). Slate blue. Large flowers. Buds dark violet.

Pinks, Reds and Wine Shades

LUCIE BALLET (Baltet, prior to 1888). The charm of this lovely variety cannot be easily defined. The florets are medium size, a dainty pink. The buds light rose. Sometimes the plant does not establish itself easily, but it is utterly charming, free flowering, easily propagated. A must.

BUFFON (Lemoine, 1921). One of the loveliest of the *Giraldii* hybrids. It blooms two weeks before the French hybrids. It has enormous trusses of pink blooms loosely placed, very graceful in every way. It makes a large, bushy shrub and blooms reliably every year. Fine.

MME. FRANCISQUE MOREL (Morel, 1892). Deep rose pink with truly enormous trusses. It is always admired, and reproduces itself freely.

MARECHAL FOCH (Lemoine, 1924). One of the last of Lemoine's productions. Its flower clusters are very large, composed of florets of great size. The flowers are a rich pink, the plant grows large and erect in a military way.

MONGE (Lemoine, 1913). Large, rosy purple flowers that darken as they fade. Florets large, cupped. Very showy and rich.

(Continued on Page 33)

American Trees For British Forests

F. C. LIVINGSTONE*

LARGE parts of Sherwood Forest in England—the legendary home of Robin Hood and his merry men—are to be replanted with trees from the United States and Canada. This decision has been reached not as a gesture of international amity but simply because the atmosphere in heavily industrialized Britain has proved to be too foul for its native oaks. Sherwood lies close to the city of Nottingham, in the center of the black belt of England's "Midlands," the biggest concentration of heavy industry in the country.

The planting of transatlantic trees will not be in the nature of an experiment, for many species have already proved themselves capable of withstanding the deadly effects of English smog. The first trees to be transplanted naturally came from the eastern states, for the year was 1596. They were the *Thuja occidentalis*—the *occidentalis*, of course, implying not Western American but merely the New World to the west of Europe. This species has been especially popular for hedges ever since it was introduced into Britain.

The greatest success of all American trees in Britain has been that of the Sitka spruce, the name of which comes from the Sitka Sound, in Alaska. More than 25,000,000 of these have been planted each year by the British Forestry Commission for several years past, and the Sitka spruce has already proved of tremendous value for the supply of pit-props, building lumber, packing cases and, most important of all, for woodpulp for newsprint manufacture.

The British Forestry Commission has also had great success with the lodgepole or contorta pine, which, as its name implies, usefully served the Indians for building their lodges.

*We are most grateful to Mr. Livingstone, South Kensington, London, England, for sending this article in to us unsolicited. We would welcome other similar contributions. (The Editorial Staff, of course, reserves the right to decide what material may be published.)

This tree flourishes between the 2,000-foot and 6,000-foot levels in the Rockies, especially in the Canadian Provinces of Alberta and British Columbia, and it has been successfully planted in many parts of Britain, especially the Highlands of Scotland, where no trees have ever grown before.

While the lodgepole pine flourishes in inhospitable regions, the Douglas fir has become popular in valleys where it is sheltered from the wind and where the soil is richer. The Douglas fir was first introduced by a young Scots traveler, David Douglas from Perthshire, from the banks of the Columbia River in the states of Oregon and Washington, and is now to be seen in considerable profusion in many parts of Britain. The tallest tree in the whole of Britain is the 180-foot-tall Douglas at Duncraig, in Wester Ross.

For fast-growing timber trees, the British have gone in for large plantations of the so-called western red cedar (*Thuja plicata*), which provides light-weight timber of high quality.

Other western trees which do well in Britain are the grand or giant silver fir (*Abies grandis*) and the noble silver fir (*Abies procera (nobilis)*), both of which have given particularly good results in some parts of Scotland, notably on the 3,000-acre estate of Stonefield Castle in Argyllshire, which is a veritable botanical wonderland.

Two Californian species flourish in the south of England—the Monterey pine (*Pinus radiata*) and the famous redwood. The sharp British frosts do not encourage the redwoods and plantings of them are therefore mainly restricted to the area south of the River Thames, although the heaviest stand of them is at Welshpool, in central Wales, where a fine grove has been thriving for nearly a hundred years. Incidentally, the second highest tree in Britain, again a Douglas fir, is only a mile

(Continued on Page 36)

Winter Damage to Plants in Arboretum

B. O. MULLIGAN AND J. A. WITT

IN the Winter issue of the BULLETIN we mentioned the very abnormal cold week which occurred throughout the Northwest in mid-November, and very briefly indicated some of the damage evident at that time.

Now, more than two months later, much more definite information can be given as to the extent of that disaster to our trees and shrubs in the Arboretum, which came so suddenly and found them totally unprepared for such wintry weather. It must be emphasized, however, that this is only an interim report and that it will be a long time before we know the full effects of that week.

RHODODENDRONS

While our examination of these is incomplete, we have already removed all our dead plants of *R. arboreum*, *R. decorum*, *R. cinnabarinum*, *R. Johnstoneanum*, *R. cyllium*, *R. Griersonianum* and most of its hybrids, all in the *Falconeri* and *Grande* series, *R. fulvum*, *R. didymum*, and cut to ground level *R. rubiginosum*, *R. ciliatum*, *R. tephropeplum*.

Some of these were original plants of the Tenny and Dexter collections of 1937-40, 10-12 feet in height with trunks 4-5 inches in diameter.

Among the hybrids, *R. Loderi* is severely injured but only a few plants have as yet been removed; so are "Loder's White," "Beauty of Littleworth," "Azor," "Gill's Crimson," "Penjerrick," "First Flush," "Lady Chamberlain" and its allies and forms.

A few which are noticeable among the survivors are "Luscombei," most of the *Williamianum* and *Fortunei* hybrids, and a bed of *Loderi* seedlings.

The total number of rhododendrons removed or cut down to date is well over a thousand, and might be double that eventually.

In the lath houses a large number of excellent young plants of highly rated named seedling hybrids have been destroyed, and others severely crippled. The same applies to most of

the young Glenn Dale azaleas in this house, and probably to many of their older brethren on Azalea Way, although no census has as yet been made there.

Fortunately, the University of California Botanical Garden, through its director, Dr. T. H. Goodspeed, and botanist in charge, Mr. Paul Hutchison, promptly offered to replace as many lost species as possible and has already sent us scions of 34 which have been grafted in our propagating house. In addition we shall obtain surplus plants from the same generous source this spring, and probably elsewhere in California and Oregon, so that some of the wide gaps in Rhododendron Glen may be filled without too much delay.

A large supply of seeds of rhododendron species has also been received and sown, from the famous collection at Edinburgh Royal Botanic Gardens and the royal gardens in Windsor Great Park, England, which should insure the eventual replacement of most, if not all, our lost plants.

CAMELLIAS

The losses in these much exceed in proportion those in the rhododendrons, although at first they did not seem so badly hurt, since a number of plants retained their leaves (or many of them) until mid-February. However, incisions made then in the bark near the base of the stem showed that the cambium layer was brown and dead, even where most of the foliage was still on the plant; in those which were leafless, or nearly so, the bark had often cracked open and was splitting off.

So far (mid-February) 349 plants have been taken out, representing approximately 145 varieties of *C. japonica*; many of them were 15 years old or more. In addition, all the forms and hybrids of *C. saluenensis* in the lath house also appear dead, as is *C. reticulata*, *C. oleifera*, and most forms of *C. Sasanqua*.

EUCRYPTPHIA

All our plants are evidently dead, except

possibly one or two of the deciduous *E. glutinosa*. The collection included *E. nymansensis*, about 15½ feet high, together with *E. lucida* and the hybrid *E. intermedia*, both somewhat smaller but growing vigorously. Somewhat slow to attain flowering size, the loss of these is particularly regretted and they will not be easily replaced.

EUCALYPTUS

The loss of these in such severe weather is not surprising although our largest plants of *E. Gunnii*, *E. coccifera* and *E. Perriniana* were 25-30 feet in height, and had survived a low temperature of three degrees F. in January, 1950. *E. parvifolia*, of the same age but smaller, is also apparently dead.

HEBE

The entire collection of about 40 species has been killed and removed. The majority, raised from seeds from New Zealand, had been planted in the spring of 1949, and, although not generally very showy in flower, had considerable value as low-growing evergreen shrubs. These will be more quickly and easily replaced, from seeds or cuttings, than many other genera.

CISTUS

This is another group of evergreen shrubs which has suffered most severely. All species except two—*C. laurifolius*, and *C. Atchleyi* from the mountains of Greece—were killed and have been taken out. The total number is 395, plus 92 plants of the closely related but generally yellow-flowered species of *Halimium*. Fortunately we had propagated some of our best kinds by cuttings taken in September 1955, and had collected seed of some ten or twelve more, most of which are now growing in the greenhouse.

CONIFERS

Losses are most noticeable and numerous in pines and cypresses, but a variety of plants, usually young, of other genera have likewise been eliminated by the weather. Of pines we have evidently lost the Mexican species *P. patula*, *P. pseudostrobus* and possibly *P. ayacahuite*; the Californian bishop pine (*P. muricata*) and at least some young plants

of the digger pine (*P. Sabiniana*); only one mature tree of a group of Coulter pines shows much burning of the foliage. Of Asiatic species *P. yunnanensis* is certainly dead; the Japanese black pine (*P. Thunbergii*) was considerably burned, as is *P. Armandii*. A group of Scots pine at the north end of Azalea Way is badly discolored, but the extent of damage has not been determined as yet.

Of fifteen species of *Cupressus* grown, at least six are dead, including the Californian Monterey, Gowen and Abrams cypresses; probably also *C. pygmaea* from the coast of Mendocino County. The Western Chinese *C. Duclouxiana* is another casualty, and probably also the Mexican *C. lusitanica*.

However, three or four other species have come through the ordeal with little or no damage, including *C. Sargentii*, *C. nevadensis*, *C. Bakeri* subspecies *Matthewsii* from the Siskiyou Mountains, and 1-2 year-old plants of *C. arizonica* in the lath house. All these last will certainly be worth propagating for the future.

Of *Chamaecyparis*, the false cypress, the Japanese *C. obtusa* was scorched brown and can scarcely survive, but *C. pisifera*, the Sawara cypress from the same country, was hardly marked. *C. Lawsoniana*, the Port Orford cedar of southwest Oregon, was generally burned, but varying in degree according to variety and exposure to sunshine; the grey-leaved forms seem to have suffered least. The interesting hybrid between the Monterey cypress and Port Orford cedar was slightly discolored on the south side.

Among hemlocks, young plants up to 5-6 feet high of our native western hemlock (*Tsuga heterophylla*) were frequently defoliated and killed; some vigorous young trees 8-9 feet tall of the Japanese *T. Sieboldii* have also been severely burned, and our single plant of the Chinese *T. yunnanensis*, raised from seeds from southwest China, is now deceased.

In the spruces, the beautiful Himalayan *Picea Smithiana* is quite brown and may not

(Continued on Page 30)

The Arboretum Bulletin

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Special Notice

To keep memberships in the Arboretum Foundation in good standing, dues should be paid during the month payable. Active memberships more than three months in arrears will be dropped and THE BULLETIN will be discontinued.

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I hereby apply for membership in the Arboretum Foundation and remittance for same is enclosed to cover dues for the next succeeding 12 months.

Name.....

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All memberships are non-assessable.

Notes and Comment

THE Arboretum recently received an anonymous gift of \$16,000 which will be used for certain projects within the Arboretum. Especially interesting will be one project planned to start later in the summer, in the field of genetics. A complete grid system of mapping the Arboretum in 100-foot squares is now being undertaken with part of these funds.

The Victoria Horticultural Society will present their "Victoria Spring Garden Festival" May 2-5, inclusive, 1956. This privilege of enjoying delightful private gardens (about 40 of them) is made possible once a year. Special arrangements will be made to take care of large parties. Write the Chairman: Mr. Alex Main, 3235 Doncaster Drive, Victoria, B. C.

We cordially welcome the following new members (since Jan. 1, 1956) of the Arboretum Foundation:

Mrs. Robert L. Andrews, Mrs. Fields B. Arthur, Mrs. Clyde W. Beattie, Mrs. Erwin Berner, Mrs. Paul B. Bowman, Mrs. W. Buckingham, Mrs. Lewis B. Cameron, Mrs. V. L. Chestnut, Mrs. Kenneth C. Cole, Mrs. A. T. Curren, Mrs. John David, Mrs. Cecil Davis, Mrs. Frank Dolp, Mrs. R. E. Duckering, Mrs. John B. Gordon, Mrs. James M. Hatfield, Mrs. Franklin Hefford, Alvin Jensen, Mrs. Jack Kyle, Mrs. George H. Marble, Mrs. J. P. McDermott, Mrs. Ivor W. Merryfield, Mrs. Frank Oakley, Mrs. Nick Rerecich, Mrs. Ernest G. Scott, Mrs. Leo Segalla, Mrs. C. N. Shaw, Mrs. Calhoun Shorts, Mrs. Fritz Sigel, Mrs. Victor Smith, Mrs. Eugene L. Snow, Mr. and Mrs. K. W. Sorrells, Mrs. Robert A. Spencer, Mrs. Howard L. Steele, Mrs. Owen Strecker, Mrs. Irving T. Tague, Mrs. Tom F. Weekes, Mrs. Lewis E. Young, and the following affiliated organizations: Glove & Trowel Garden Club of Seattle, Mt. Baker Garden Club No. 1, Seattle Rhododendron Society, Shorewood on the Sound Garden Club.

Extract from a letter from Mr. Donald G. Graham, Chairman of the Bridge Committee of the Arboretum Foundation, dated January 24, 1956.

"A meeting of the Board of Directors of the Foundation which was held early in December resulted in the unanimous passage of a resolution opposing locating any bridge approaches whatsoever in the Arboretum. The Chairman of the Bridge Committee with the President were authorized to take steps to implement this resolution and to stop, if possible, the threatened Arboretum depredation. Quick action was necessary because the plans of the Toll Bridge Authority were at that time practically finalized. The resolution was sent to the Seattle Park Board, the Board of Regents, and to the Governor. A letter to the Seattle City Council enclosing a copy of the resolution asked the Council to go on record individually and collectively against the Toll Bridge Authority appropriating any portion of the Arboretum for bridge approach rights of way. As a result, the City Council passed a very strong resolution which stated that the Council would neither give nor sell any rights of way to the state for bridge approaches and further that it would resist any attempt to take same by condemnation proceedings. The land upon which the Arboretum is situated is owned by the City of Seattle and leased to the University of Washington.

"I consider this action by the City Council to be one of the most constructive things occurring in the second Lake Washington Bridge development. The following Councilmen, being all of the Council, voted in favor of this resolution: J. D. Braman, Charles M. Carroll, Mrs. Harlan H. Edwards, Robert H. Harlin, Bob Jones, David Levine, Clarence F. Massart, M. B. Mitchell and Alfred Rochester.

"Following the Council's forthright stand against the announced plans of the Toll Bridge Authority to use the Arboretum for bridge approaches, the Governor indicated that he would not insist on locating the bridge against

the wishes of the people of Seattle and offered to bring in outside engineering advisers for a 'new look.'

"The Seattle Planning Commission over two years ago recommended that the Second Lake Washington bridge crossing be from Sand Point to Kirkland. Their reasoning was based on long-range planning and the fact that the largest potential number of bridge users would utilize another bridge at this location. Unfortunately, the Toll Bridge Authority engineers have shown little, if any, interest in following long-range planning principles nor have they cooperated with the Seattle Planning Commission. It is hoped that when the new look is taken and outside engineers are brought in that the engineers will not have the final say and that the recommendation of a nationally known planning expert will also be considered and followed."

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A Replacement Fund, to cover purchase of rhododendrons and other plants lost in the November freeze, was recently established and a sizeable sum has been received from many Garden Clubs and 15 of the Arboretum Units. A list of the present contributions and any further amounts received will be published in the Summer issue. The total sum now stands at \$1,088.28.

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Watch for the following Festival Days at the Arboretum—remember the dates and bring your friends and/or visitors to the Arboretum:

April 18, 1956—Cherry Festival.

May 6, 1956—Crabapples.

May 20, 1956 — Rhododendrons, Azaleas, Magnolias.

October 14, 1956—Fall color and conifer display.

, , ,

"God meant that we should kneel to do the things that make life good—
To bathe the baby in his tub, to polish fragrant wood,
To light the fire on the hearth, to tend a flower bed.
God never lets us reach for these, He makes us kneel instead."

ARBORETUM NOTEBOOK

This department is published for correspondence and pertinent comments by experienced growers on interesting plants and their culture. We solicit your questions, but space limitation necessitates the publishing of only such answers as we deem of general interest.

GARDEN HINTS . . .

APRIL

Now the *Erythroniums* are in bloom. *E. montanum* is the "Avalanche Lily" that grows in the mountain meadows, white with a yellow throat and green leaves. It refuses to do its best in our lowland gardens. A trip to Mount Rainier is an outstanding thrill when the lilies are in bloom. *E. revolutum*, the Coast Adder's Tongue, is found on the western slope of the Coast mountains. The blooms are rose color, growing pale toward the base. It is generally one-flowered. The leaves are beautifully mottled. Two other varieties, often seen, are *E. grandiflorum* and *E. oregonum*. *E. grandiflorum*, called the yellow Adder's Tongue, has un-mottled, broadly lanceolate leaves. It is bright yellow, generally one-flowered but occasionally found with two or several flowers on the stem. *E. oregonum* is the Giant Adder's Tongue with long, lance-shaped, mottled leaves and cream-colored blooms shading to orange toward the base. The stems carry from one to six blooms. The bulbs should be planted in a damp, shady, woodsy spot in September or October. Carl Purdy, who was one of the Pacific Coast's most outstanding naturalists, said the bulb of *Erythronium* is an annual and has a peculiar habit of forming a new bulb each summer at the side of the old bulb that blossomed in the spring. In turn this year's bulb forms and the old bulb shrivels to a scar-like tissue. This procedure continues each year until there is a chain of rhizome-like growth that goes on for years. The fibrous feeding roots form at the base of last year's bulb. This year's blossoming bulb or rhizome has no connection with the current year's growth.

When naturalizing daffodils we should try to avoid a mass planting with no form. They are more effective in groups with perhaps "ribbons" of blooms connecting the clusters.

Early blue flowers are perfect to grow with them: Forget-me-nots, blue-eyed Mary (*Omphalodes vernum*) or any of the blue anemones.

When replacing bushes lost in the heavy freeze, I would suggest for examination *Robinia hispida*. It has structurally ornamental, deep green foliage and pendent racemes of rosy pink flowers. Its branches are somewhat brittle so it may be best to plant it in a fairly sheltered place. It grows well in mid-western States, so its hardiness should not be questioned.

When fortune comes your way and there is a bit extra to spend, try *Eremurus*, the giant asphodel. It is dramatic and beautiful, a conversation piece in any garden. The plants come from Central Asia, specifically Turkestan. The flower spike is from 8-10 feet high with beautiful pastel-colored small blooms crowded along the upper half or more of the stem. It likes a well-prepared, well-drained, rich, sandy soil. It belongs to the lily family so it has the same fleshy roots as the lily and it hates a tight, clayey, wet soil, like all the members of the family. There are various hybrids today but if you can have only one try to plant it in front of a pine tree.

MAY

It was a great satisfaction, after our 1955 misfortunes, to find *Helleborus niger*, the Christmas Rose, sending up its buds and flowers with its usual beauty and charm. The leaves may have suffered in some gardens. *H. niger* varies much from seed. *H. n. altifolius* has large blooms (sometimes four inches across), long stems and is always tinted rose. This form is a selected variety that came from seed and closely resembles the *H. macranthus maximus* so difficult to procure. *H. niger* is easily raised from seed if sown as soon as ripe in May. Then the seeds germinate rapidly. Otherwise they may lie dormant many months. Sowing the seed in the soil about the parent plant or wherever one wishes them to grow

is best, as they hate disturbance. The variety of blooms may be rewarding.

Carnations or all of the Pinks (*Dianthus*) seem to have weathered our winter. I have always thought it would be interesting to feature this family when building a garden. All colors except blue are represented and could be used to great advantage. They grow in different heights and there may be bloom from early spring to late in fall.

JUNE

It is generally conceded that the broom family, which includes *Cytisus* and *Genista*, is taking its place among the best flowering shrubs. Besides being hardy they will grow beautifully in the poorest, dryest soils. They need very little cultivation and care. An amateur needs to know very little about them to grow them successfully. Many named varieties are on the market now, but be sure to see them in bloom to choose the ones you like.

Most everyone lost, or nearly lost, their roses this year. Consequently, our attention will be unusually focused on the rose bed, probably with new varieties. Leaf spot and chewing insects may be anticipated. Your favorite spray should be used regularly. They need small feedings of food each month. If we have a hot summer mulching will help the roses and shrubs that suffered the winter blast. Sawdust is accepted by most growers as good as any mulch, but requires some additional nitrogen fertilizer to break it down.

Summer pruning could consist of pinching out the tips of tender growths in June, controlling the new shoots and lessening the hard pruning later in the season.

Alyssum saxatile should be cut back after blooming, leaving only a few inches of plant. Removing all long, straggling growths generally insures fall bloom.

If you have a bare spot in the perennial border, window box or a sunny corner, try planting a geranium. The clear colors combined with its attractive foliage is like a ribbon in your hair or a blossom in your buttonhole.

 * * *

TIMELY QUOTES . . .

"After an unusually severe winter or in

very frosty gardens, spring pruning may also be necessary for all varieties (of *Hydrangea*) to ensure getting at least a few flowers from the damaged plants, and, above all, to prevent the loss of the new growth in the following winter. Some of the branches will be completely dead; others, though they may seem at first sight to be in much the same state, are still alive except for their tips. The latter should be carefully pruned off to a point just above the joint on live wood. Flowering shoots will spring from the point, provided that the variety is one of the free-flowering ones and that the plant's energies are not permitted to expend themselves on sending up too thick a sheaf of young shoots from the base. These basal shoots must be thinned out to about half their number as soon as they appear, leaving just enough to form the framework of the new bush that will have to be grown. The few shoots left, thus given full light and air and the nourishment that should have gone to the many, have then a better chance of ripening to a fit state to stand next winter.

"Once a *Hydrangea* of one of the hardier varieties has made a well-furnished bush it is practically safe from ordinary frost damage for life, provided it is not interfered with. Ancient bushes in every county in England testify to this. Once autumn-pruned, however, unless care is taken to spring-prune also, so as to make good the damage caused, the plant seldom re-establishes itself properly."

"*The Hydrangeas*," Michael Haworth-Booth.—(Constable, London) (1950)

* * *

Ceanothus "Gloire de Versailles." "In Coast gardens it is sometimes permitted to develop into a large shrub without the customary annual pruning and, as a result, it frequently attains a height and breadth of 8-12 feet. This procedure is not necessarily recommended as a general practice. The traditional practice in cooler climates is to prune the plants rather severely each year in February or early March to induce production of vigorous shoots. The main branches of free-standing shrubs are left at a height of about 12 to 18 inches and the secondary branches shortened to about two to

six buds. A second pruning is sometime desirable in August to induce heavy fall flowering. In areas of California having mild winters, and perhaps in Oregon and Washington, plants should be pruned in late autumn rather than in spring."

"*Ceanothus*," Maunsell Van Rensselaer.—
(Santa Barbara Botanic Garden) (1942)

“The English Irises are not only amongst the most beautiful summer flowers, but they increase. I like seeing a great thick row of them growing along the edge of a path. Big clumps of them near vigorous free-flowering pink roses, such as ‘Else Poulsen,’ are delightful. The English Irises are invaluable for picking, the most decorative of all being the rich China blue kinds, especially ‘King of the Blues.’ The earlier in the autumn these Irises are planted the better, but not before the end of August. They flourish in any soil and should be planted three inches deep.”

“*Gardens of Delight.*” Eleanour Sinclair Rohde.—(Hale, Cushman & Flint, Boston)

List of Plant Names

(Continued from Winter 1955)

| | | | |
|------------------------|----------------------------|-----------------------|--|
| <i>Selenicereus</i> | moon goddess and cereus | <i>Serjania</i> | for Paul Sarjeant |
| <i>selense</i> | from the Si La pass | <i>serotinus</i> | late-flowering |
| <i>Selinum</i> | Greek name for parsley | <i>serpens</i> | a snake |
| <i>Semecarpus</i> | Greek mark and fruit | <i>serpentinus</i> | of snakes, creeping |
| <i>Semele</i> | for the mother of Bacchus | <i>serpyllifolius</i> | thyme-leaved |
| <i>semialatus</i> | semi-winged | <i>serratifolius</i> | serrate-leaved |
| <i>semibarbatus</i> | partially bearded | <i>Serratula</i> | from serrula, a little saw |
| <i>semicaudatus</i> | semi-tailed | <i>serratus</i> | saw-toothed |
| <i>semicylindricus</i> | semi-cylindrical | <i>serrulatus</i> | with small teeth |
| <i>semidecandrus</i> | half ten-stamened | <i>Sesamum</i> | Gr. name taken by |
| <i>semilunatum</i> | half crescent-shaped | | Hippocrates from Arabic |
| <i>semipinnatus</i> | imperfectly pinnate | <i>Sesbania</i> | from Sesban, an Arabian name |
| <i>semnoides</i> | resembling (Rhodn.) semnum | <i>sesquipedalis</i> | one foot and a half long |
| <i>semperflorens</i> | ever-flowering | <i>sessiliflorus</i> | sessile-flowered |
| <i>semperfivrens</i> | evergreen | <i>sessilifolius</i> | leaves stalkless |
| <i>Sempervivum</i> | Lat., living forever | <i>sessilis</i> | stalkless |
| <i>semperfivoide</i> | like <i>Sempervivum</i> | <i>setaceus</i> | bristly |
| <i>Senecio</i> | Lat. name senex—“old man” | <i>setiferum</i> | bristle-bearing |
| <i>senecioides</i> | senecio-like | <i>setifolius</i> | bristle-leaved |
| <i>senilis</i> | senile, old | <i>setigera</i> | bristle-bearing |
| <i>sensitivus</i> | sensitive to touch | <i>setipodus</i> | bristle-footed |
| <i>sepiarius</i> | of or pertaining to hedges | <i>setispinus</i> | bristle-spined |
| <i>sepium</i> | of hedges or fences | <i>setosus</i> | full of bristles |
| <i>septangularis</i> | seven-angled | <i>setulosus</i> | full of small bristles |
| <i>septemfidus</i> | seven-cut | <i>Sheltonae</i> | for Mrs. Shelton, |
| <i>septemlobus</i> | seven-lobed | | wife of missionary |
| <i>septempunctatus</i> | seven-spotted | <i>Shepherdia</i> | for John Shepherd, |
| <i>septentrionalis</i> | northern | | of Liverpool, England |
| <i>sepultus</i> | interred | <i>Sherriffii</i> | for Capt. G. Sherriff, |
| <i>sericanthus</i> | silky-flowered | | English plant collector |
| <i>sericeus</i> | silky | <i>sheweliense</i> | the Shweli River, Burma |
| <i>sericifera</i> | silk-bearing | <i>Shortia</i> | for Dr. Chas. W. Short, |
| | | | of Kentucky |
| | | <i>siameus</i> | of Siam |
| | | <i>sibericus</i> | of Siberia |
| | | <i>Sibiraea</i> | from Siberia |
| | | <i>Sibthorpia</i> | for Dr. John Sibthorp, |
| | | | Prof. of Botany, Oxford |
| | | <i>siculiformis</i> | like a small dagger |
| | | <i>siculus</i> | from Sicily |
| | | <i>Sicyos</i> | Greek name for cucumber |
| | | <i>Sidalcea</i> | compound of <i>Sida</i> and <i>Alcea</i> , |
| | | | related genera |
| | | <i>sideratum</i> | heavenly, divine |
| | | <i>Sideritis</i> | Gr., ability to heal wounds |
| | | | caused by iron |
| | | <i>siderophyllum</i> | rusty-coated leaves |
| | | <i>signatus</i> | marked |
| | | <i>silaifolius</i> | leaves like Silaus |
| | | <i>Silene</i> | Gr., one of Bacchus' |
| | | | companions |
| | | <i>siliceus</i> | pertaining to sand |
| | | <i>siliquosus</i> | bearing siliquas (pods) |
| | | <i>Silphium</i> | Gr. name of plant in N. Africa |
| | | <i>silvaticus</i> | of woods |
| | | <i>Silybum</i> | old Greek name |
| | | <i>simiarum</i> | of the apes |
| | | <i>similis</i> | similar, like |
| | | <i>simplex</i> | simple, unbranched |
| | | <i>simplicicaulis</i> | simple-stemmed |
| | | <i>simplicifolius</i> | simple-leaved |
| | | <i>Simsii</i> | for John Sims, |
| | | | English botanist |
| | | <i>simulans</i> | resembling, imitating |
| | | <i>sinicus</i> | Chinese |
| | | <i>Sinningia</i> | for Wilhelm Sinning, |
| | | | German gardener |
| | | <i>sino-Falconeri</i> | Chinese Falconeri |
| | | | (<i>Rhododendron</i>) |
| | | <i>sino-grande</i> | Chinese grande |
| | | | (<i>Rhododendron</i>) |
| | | <i>Sinojackia</i> | Chinese, and to honor J. G. |
| | | | Jack, Arnold Arboretum |

(Continued on Page 36)

Let's Brag About Our Arboretum Units . . .

BROADMOOR ARBORETUM UNIT, NO.

65, is now two years old. It was organized by three active members of the Arboretum Foundation—Mrs. Roy Maryatt, Mrs. W. F. Paddock and Mrs. W. D. Shannon. Under their fine leadership our unit has become a valuable class in better gardening for twenty-four enthusiastic dirt gardeners.

One of our members, Mrs. Barnet Fisher, specializes in orchid raising. At present she has about one thousand plants in her greenhouse and solarium. Although most of these are cattleyas, she also raises vandas, cypripediums, odontoglossums, dendrobiums, cymbidiums and coelogynes.

Since more than 50 per cent of our members are amateurs, our programs have stressed basic gardening needs. This year we are beginning a class in plant selection, pruning and landscape design with Mrs. Wendell Brazeau.

We are proud of our first project for the Arboretum—a gift of \$50 for the construction of a colored map of the Arboretum which will make a practical guide for visitors in the summer months. At present it is hung in the Arboretum clubhouse.

LOIS C. TEWELL
(Mrs. C. W.)

Arboretum Unit No. 43 elected to make several field trips during the summer of 1955. Starting time was shortly after 8 a. m. from the parking lot of an Issaquah bank. Hiking clothes, two lunches and collecting equipment were routine.

June 1 found two station wagons on the way over Snoqualmie Pass with a stop at Lake Cle Elum. Early lunch was enjoyed on sunny rocks by clear blue water. Beautiful specimens of driftwood were plentiful on the shore for collectors. Continuing through Cle Elum we turned off at Teanaway Junction, made a left turn up the old river road and north to Jack Creek. Spring flowers were in abundance including sticky phlox (*Phlox viscidula*), shrubby penstemon (*Penstemon fruticosus*), parsley fern (*Cryptogramma acrostichoides*), service berry (*Amelanchier florida*) and *Calypso bulbosa*. We wandered about in broad meadows resembling well-kept parks.

The second trip occurred July 11, the route taken being the same through Cle Elum, Teanaway Junction and on to the Liberty Road to the east. This leads up Table Mountain in country of mixed Cascade growth. A wet stretch of road on a shady north slope kept us from attaining the top of the mountain with its broad expanse of orchard country below. However, lush roadsides yielded specimens for our woodland plantings. Part of the area visited is in an elk cross-over with recent evidence quite noticeable. Explorations were made on foot and especially noted were bell flower (*Campanula rotundifolia*), tall lungwort (*Mertensia paniculata*) and tall mountain star (*Dodecatheon Jeffreyi*).

The final trip was September 19 to Mowich Lake in Rainier National Park (no collecting this time!) Lunch in the sunshine by the lake shore where there is a picnic area. Afterwards a hike was undertaken on the easy Spray Park Trail. Wild flowers were plentiful, with the path winding through masses of them in the damp places. We listed western cassiope (*Cassiope Mertensiana*), rock penstemon (*Penstemon rupicola*), sparse-flowered bog orchid (*Habenaria sparsiflora*), mountain bog gentian (*Gentiana calycosa*), common paintbrush (*Castilleja miniata*). Glimpses of snowfields on the mountain gave a thrill from view spots but all too soon the fog rolled and billowed about and only our hardiest members ventured into the myriad foot paths in the mountain meadows at the end of the trail. Hot drinks by a dying campfire in the late afternoon chill brought our season of exploring in the Cascades to an end.

MRS. WALTER B. SEELYE

1 1 1

The January 1956 issue of *The Green Thumb*, published by the Colorado Forestry and Horticulture Association, contains three short but interesting articles on the progress of the Denver Botanic Garden and especially its donated collections of lilacs, crabapples and conifers.

BOOK REVIEWS

Plant Propagation Practices, by James S. Wells. 344 pp., illustrated. The Macmillan Co. Price \$7.50.

AMES WELLS is a practicing nurseryman, brought up in England where the emphasis has often been on perfection of skill in established methods, rather than daring experimentation with new ideas. However, when he came to this country in 1946 to be propagator for the Koster Nursery in New Jersey, he not only began to try out the latest results of research in propagation, but to experiment on his own, and, what is more important, to publish the results.

In this book he draws mainly on his own wide experience, backed by research, for source material, with a minimum of the conventional textbook diagrams and directions so familiar in this field. His emphasis is on the functional approach, effect of moisture, heat, light, hormones, etc., and how they can be controlled to result in easier, more rapid and cheaper propagation.

Two subjects which have received Wells' intensive study have been control of moisture by automatic humidification, and use of very strong hormones for subjects formerly considered very difficult to root. His success with cuttings, resulting from maximum control of these and other factors, has caused him to stress propagation by cuttings and give less than the usual space to the more complex and expensive method of grafting.

This is not a manual for propagation of all kinds of unusual plants, as the author sticks to those species with which he has had experience, but this includes many of the more important shrubs and trees and the principles developed may, of course, be applied to other plants. Individual chapters are devoted to Rhododendrons, Azaleas, Camellias, Boxwood, Japanese Maples, Dogwood, Cypress, *Cryptomeria*, American and Oriental Arborvitae, American and Japanese Holly, Junipers, Yew, Koster's Blue Spruce, *Pieris*, Lilacs and Magnolias.

It has been this reviewer's good fortune to visit Mr. Wells at Koster's, and, more recently, at the Bobbink Nurseries where he now is production manager. The appearance of the propagating units, the methods being used, and the results being obtained, indicated the hand of an expert. This book is an important contribution to horticultural literature, not only for the beginning nurseryman, for whom it was primarily written, but for the advanced amateur gardeners who often come up against tough propagation problems.

J. HAROLD CLARKE

1 1 1

"Vascular Plants of the Pacific Northwest: Part 5: Compositae," by Arthur Cronquist. University of Washington Press, Seattle, 1955. 343 pp., illustrated. Price \$7.50. University of Washington Publications in Biology, Volume 17.

THIS is the final volume of the work as planned, but the first to be issued. Whether this reverse order is the result of circumstances or design, the result is most opportune. The only Western Flora of comparable scope and treatment, the "Illustrated Flora of the Pacific States," by Dr. L. Abrams, still lacks the final

volume containing the *Compositae*. Consequently, until the appearance of Dr. Cronquist's volume, there has been no comprehensive work available on this large, important and difficult family. It should be noted, however, that these two works do not deal with the same geographical areas, except in part. Dr. Abrams' work is restricted to the three maritime states, Washington, Oregon and California. On the other hand, to quote the author: "The Pacific Northwest is here defined to include all of Washington, the northern half of Oregon (approximately north of the 44th parallel), Idaho north of the Snake River Plains, the mountainous part of Montana, and an indefinite southern fringe of British Columbia."

The systematic treatment on the whole is conservative, and in some genera many reputed species find their way into synonymy or varietal status. In a work of this sort it is novel to find an alphabetical arrangement throughout, both of genera and species. This removes the need for an index, although there is one to synonymy, and facilitates reference to a particular species. This departure from the current practice of following a quasi, largely out-moded, sequence that is supposed to have some phylogenetic basis, is very commendable. The listed synonymy appears to be quite adequate, and considerable attention is given to taxa below the rank of species.

The illustrations, by J. H. Rumely, deserve a special word of praise. Every species is figured, together with dissections, and more varietal forms are drawn than in many works—an important help. The figures are less crowded on the page than is often the case, the detail is excellent and the impressions beautifully clear and sharp. Altogether this is a noteworthy addition to the Floras of the Pacific Northwest.

JOHN W. EASTHAM
Honorary Curator of the Herbarium,
University of British Columbia

1 1 1

"Trees, Shrubs and Flowers to Know in the State of Washington," by C. P. Lyons. J. M. Dent & Sons (Canada) Ltd., Toronto & Vancouver, B. C., 1956. Price \$3.40.

THIS excellent book outlining the trees, shrubs and flowers of the State of Washington comes to my desk just as the ARBORETUM BULLETIN is going to press, so I trust in so short a time I may, in a measure, endeavor to do justice in reviewing some of the intrinsic highlights of this valuable handbook.

In this flora of Washington, to use Mr. Lyons' own words, "There is always a tendency to think that something more attractive and interesting lies just beyond our reach. For example, how colorful the Eastern hardwoods are pictured, the exotic waving palms of California, or the bristling cacti of New Mexico. But perhaps if we made a quick inventory of Washington we would appreciate what an outstanding variety of flora there is within a few miles of us. No less than seven out of the ten forest regions of all the United States are found here."

From the time you open the book you are engrossed in what one might term a fascinating

and colorful travelogue, for immediately, on one of the very first pages, he starts you out mile by mile throughout the state, listing highways, trails, etc., to take, in order to find the outstanding floral areas where these flowers can be seen in bloom to their best advantage, and just exactly the areas that they can be found in.

Painstaking lists of ranges, regions and elevations, and zones such as Coast Forest Zone, Mountain Forest Zone, Sub-Alpine Zone, and Alpine Zone, with their trees, shrubs and flowers all clearly distinguished, and not only that, but on every page there are exquisite hand-etched drawings of the subject matter of the chapter; if the handbook were not so valuable for its botanical knowledge to the layman, or to those that had not had specialized training in botany, it would be invaluable for his truly artistic and excellent drawings depicting practically every family and species he has written about.

In the body of the book, illustrated keys are given which at once determine the individual species—trees, shrubs and flowers being grouped according to form and habitat, the flowers classified according to color in many instances; if I would venture one criticism (which is a very humble one, believe me, when taken in consideration of the extreme excellence of the book), I would say that this color identification might be slightly confusing to a novice, or to those who could not easily classify the specific features of the type.

This book is similar to Mr. Lyons' earlier book published a year or so ago on the Flora of British Columbia. I note, however, that several species omitted at that time, no doubt by error, have been included in this volume.

Having travelled and collected native specimens in almost all the areas he speaks of, and countless times wishing I had had with me a compact and easy-to-handle handbook, in order to clearly identify certain specimens, I can only with pleasure wholeheartedly endorse this beautifully illustrated and altogether intriguing handbook of the Flora of the State of Washington.

EDITH H. BANGHART

1 1 1

"The Old Shrub Roses," by Graham Stuart Thomas. 224 pp., 18 color and 21 monochrome plates. (Phoenix House Ltd., London, 1955). Price 32 shillings and six pence (\$4.55).

M R. THOMAS' interest in and subsequent enthusiasm for the old roses goes back less than twenty years, but during that time he has so assiduously collected both plants and information on his chosen subject that this book is the happy and attractive result of his labors in both fields.

It is divided into two sections; first, "The Development and Cultivation of the Rose," and secondly, "Old Roses in Cultivation Today." To this reviewer, by far the most interesting and stimulating part of the former is the reprinting, from the "Journal of the Royal Horticultural Society" (July and August, 1941), of the articles by the late Dr. C. C. Hurst, with the data and conclusions reached by him following his long study at Cambridge, England, of the history and genetics of the genus *Rosa*.

In these he recounted the history of four basic types of ancient roses—the red (*R. gallica*), the damask, the white, and the cabbage rose (*R.*

centifolia)—suggesting for the last three possible origins as ancient hybrids, not true species. The more easily traced pedigrees of the ancestors of our present-day roses—through the China, Noisette, Bourbon, Tea, hybrid perpetuals and their offspring—are also succinctly recapitulated, and the whole forms a most valuable summarized record of the development of our roses from the earliest times. A previous paper by Dr. Hurst (1922), "Notes on the Origin of the Moss Rose," is also included, with his valuable bibliography citing some 77 authors from Theophrastus onwards.

A note (p. 95) by Mr. G. D. Rowley, in charge of the National Rose Species collection at the John Innes Horticultural Institution, Hertford, England, indicates that the task of recreating these primary hybrids and thus proving (or disproving) Dr. Hurst's theories is now in process.

Mr. Thomas includes short but useful chapters on Appreciation, Cultivation, Pruning (these last two might well have been combined), Roses for the House, and On Old Roses in the Garden, of which more examples would have been most acceptable, since we need to know better how to place these fragrant but often delicately tinted and somewhat evanescent beauties in our gardens, to their best advantage. The use and value of a surrounding wall or hedge—a formal setting—is suggested, and I believe rightly so, for both antique and modern florists' roses—but not for the more elegant, taller species or the vigorous *rugosa* hybrids.

Part II, "Old Roses in Cultivation Today," covers 68 pages. It is divided into eight chapters, each dealing with such important groups as the *gallica* roses (here somewhat confusingly called the rose of Provins, which title only referred to the Apothecary's Rose *R. gallica* var. *officinalis*), the Damask, White, Provence (perhaps better named the *centifolia* or "cabbage" varieties), Moss, Bourbon, etc.

To growers, or would-be growers of these shrubs, this is probably the most valuable section of the book, since these chapters mainly consist of descriptive paragraphs of varieties of these roses, alphabetically arranged, the majority having been grown by Mr. Thomas, examined by him and checked as carefully as possible for correct identification.

Plants have come to his collection from the U. S. A. as well as France, Germany, Denmark and other countries, and visits have been made to the famous French rose gardens at Bagatelle and the Roseraie de l'Hay to study varieties still growing there. Living material for the necessary work of comparison and detection has therefore been available from many sources, besides the records and illustrations to be found by research in horticultural and botanical libraries.

There are descriptions of 50 forms of *R. gallica*, 19 damask roses, 13 of the white roses, 19 *R. centifolia* varieties, and 36 moss forms. This gives a good idea of the variety of roses dealt with and still to be found in such collections; the majority originated between approximately 1810 and 1870.

Of the color plates, Nos. I-IV are excellent representations, V is distinctly blue tinged, and most of the remainder somewhat unsatisfactory; IV and V include four small plates on each

(Continued on Page 36)

Winter Damage to Plants in the Arboretum (Continued from Page 21)

recover; young plants of the Chinese *P. asperata* have some foliage burned on the south and west sides, but are not damaged beyond hope.

Likewise our young plants of *Pseudotsuga Wilsonii*, a Chinese relative of our native Douglas fir, were killed.

The *Magnolia* collection did not escape although it suffered less than might be expected. The lovely pink *Magnolia, Campbellii* from the Himalaya Mountains, and its close relative from Western China, *M. mollicomata*, appear to be killed to the ground. The evergreen *M. Delavayi* is surely dead, and small plants of *M. sinensis* and *M. Sargentiana* var. *robusta* have some of their young shoots killed.

ESCALLONIAS

Our *Escallonia* collection was wiped out, and all the plants have been removed save for several of the hybrid "Donard Seedling." Strybing Arboretum in Golden Gate Park, San Francisco, has sent us cuttings of many of the varieties lost and we should have plants to replace the casualties by next year.

CEANOTHUS

Of our forty-odd species, varieties and hybrids of the California lilacs, the only survivors seem to be *Ceanothus gloriosus* and possibly *C. pumilus* from the Siskiyou Mountains, both prostrate species that were somewhat protected by a covering of fallen leaves and what little snow there was.

Unfortunately this list could go on and on; the Japanese cherries seem to have been cut back to wood of three or four years ago, and some of the younger grafted plants are dead to the graft; the *Nothofagus* species, "Southern Beeches," were almost all killed, as were some of the more tender oaks and oak relatives in the same area. Even some of our old-fashioned roses were killed, especially the older plants grafted in California, although younger plants from cuttings alongside them were undamaged.

This listing of dead and damaged plants will doubtlessly continue for the rest of this year, and it is feared that plants which appear undamaged now have been injured in a way not apparent at the present. Probably the full extent of the November 1955 freeze will not be known for several years at least.

Conspicuous Beach Plants of the Puget Sound Area

(Continued from Page 13)

and the flowers cream-colored tinged with purple.

L. littoralis is a decumbent lupin and perennial. The stems are 1 to 4 feet long and the flowers are light blue.

Only one member of the mallow family is conspicuous on the beach. This family have their stamens in a column surrounded by five petals and five sepals united at their base. *Sidalcea Hendersonii* is abundant near Everett. Its bright green stems are 2 to 5 feet high. The leaves are nearly circular, deeply 5 to 7 cleft.

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The flowers are a deep rose in terminal racemes.

The rose family is represented by the Pacific silverweed, *Potentilla pacifica*, a stoloniferous creeping herb with pinnately compound leaves. The yellow flowers are solitary in the leaf axils. The beach strawberry, *Fragaria chiloensis*, is in the same family. It is a perennial propagated by runners, has thick silky leaves and white flowers. The fruit is sweet and juicy.

There are two of the pink family common on our beaches. *Spergularia marina* is an annual with branches spreading or procumbent. The leaves are opposite, fleshy and glandular. The pink flowers are regular and perfect. *Arenaria peploides*, the sea-beach sandwort, also in the pink family, is a perennial with partly clasping thick leaves. It grows to a height of 4 to 12 inches. The flowers are axillary, solitary and small.

Of the buckwheat family the polygonums have two members on the beaches: *P. Paronychia* is a perennial with a woody rootstock. The stems are prostrate or ascending and are branched irregularly, 7 to 28 inches long. The sessile leaves are strongly keeled beneath. The flowers are white or pinkish, in small clusters axillary in the upper leaves and crowded near the summit.

Polygonum Fowleri is also a perennial with a prostrate branched stem. The flowers are axillary. Washington is its southern limit on the Pacific Coast.

The Indian Paint Brush, *Castilleja Dixoni*, is found on the beaches. It is prostrate or de-

cumbent. The leaves are thick and the showy bracts scarlet. It differs from *Orthocarpus* not only in its habitat but also in having the upper lip of its corolla larger than the lower.

Trees crowd on to beaches, either full sized or dwarfed, including the Sitka spruce, lodgepole pine and wild crabapple. Escapes from gardens find their way also, and many natives from the shores venture there. The plants I have described are the ones most likely to be observed.

Winter Aspects—January, 1955

(Continued from Page 12)

by a Whitcomb cherry and a Mugho pine. This pine, when I bought it, was a thick plant, full of vim and vigor, an almost cabbage-like growth. It has continued to be so. I have gradually spread and lowered the branches so there is space and atmosphere throughout. It has become a beautiful planting, very Japanese, though I am not quite clear what I mean by that—probably something artificial and quite remote from Japanese ideas. Behind the garage are firs and in the foreground are shrubs to bring it down to earth. On one corner is a graceful group of bamboo which now tops the ridgepole. The south wall is covered by a row of fountaining *Cotoneaster Parnayi*, never more beautiful than now when it is in full and abundant fruit, scarlet, slightly silvered with tiny scales.

 * * *

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Suburban Gardens

(Continued from Page 15)

firm flesh, good flavor. Excellent for freezing, canning, jam, preserves and fresh dessert purposes.

Marshall, early-midseason single crop variety, susceptible to virus disease, medium-low yields, berries large, round conic, irregular, soft texture, deep crimson color, good flavor, good for freezing, jam, preserves and fresh dessert purposes.

Rockhill, everbearing, plants vigorous but set very few runners, berries large, irregular conic, medium red, firm, fair dessert quality.

Red Rich, everbearing, makes good-sized plants and a good number of runner plants, productive, berries round, good size, deep red color throughout, good sweet dessert quality.

Raspberries

Goldenwest, attractive garden novelty, vigorous growth, good yields, berries medium-large, light yellow color with a touch of pink at full ripeness, pleasing good sweet flavor, makes good jam, suitable for freezing.

Washington, plants vigorous, upright growth habit, good yields, berries medium-large, attractive, good red color, excellent flavor, fine for all purposes.

Dewberry Hybrids

Cascade, originated from a cross of the native trailing blackberry variety, Zielinski, with the Logan, ripens with Logan, plants vigorous, productive, but not too hardy, berries dark red, slightly smaller than Logan, somewhat soft, excellent characteristic wild blackberry flavor, suitable for freezing, canning and pie-making.

Thornless Young, thornless form of Youngberry, quite vigorous, moderate yields, canes susceptible to freezing injury, berries large, dark red color, excellent flavor, suitable for freezing, canning and pie-making.

Grapes

Seneca, early white or yellow, vigorous vine growth, moderately productive, clusters medium-size, fairly compact, berries medium-small, oval, firm flesh, tender, excellent quality for dessert.

Ontario, early vigorous vine growth, productive, clusters medium-size, loose, berries round, medium-size, green skins, good quality for dessert.

Worden, ripens one week later than Seneca, vigorous vine growth, productive, clusters large, compact, berries large, purplish-black covered with blue bloom, tender skins, fruits often crack badly, good quality, fine for jelly and dessert.

Blueberries

Earliblue, earliest, moderately vigorous growth, upright habit, productive, fruit clusters medium size, medium loose, berries large, medium blue color, good flavor.

Stanley, ripens early midseason, moderately vigorous growth, upright habit, moderately productive. Fruit clusters medium-loose, berries medium-size, tend to become smaller as season progresses. Light blue color, spicy excellent flavor.

Dixi, a late ripening variety, vigorous growth, open spreading habit, productive fruit clusters medium loose, berries very large, medium dark, very good quality.

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Lilacs

(Continued from Page 18)

MARENKO (Lemoine, 1923). Big, broad, very showy masses of bloom, with large florets. Striking.

White

VESTALE (Lemoine, 1910). Has very large pyramidal shaped trusses with showy white florets. A fine variety.

MONT BLANC (Lemoine, 1915). A tall growing variety, pure white in flower, one week later than Vestale.

JAN VAN TOL (van Tol, about 1916). A hybrid from Holland not unlike Mont Blanc in habit. Much in demand for weddings.

Dark Purple Varieties

CONGO (Lemoine, 1896). Reddish purple. One of the most popular of the hybrids. Very free flowering. Exceptional in vigor and bloom.

ETNA (Lemoine, 1927). A very dark claret purple, with large, showy flowers. Comes into bloom late.

VIRGINIA BECKER (Becker, 1947). Orchid purple flowers in great profusion. Buds dark purple. Bushy shrub.

DOUBLE VARIETIES

Blues and Bluish Lavender

MARECHAL LANNES (Lemoine, 1910). Semi-double, flowers loosely placed. The individual florets are sometimes an inch in diameter. Flowers campanula violet, buds darker.

OLIVIER DE SERRES (Lemoine, 1909). Very large trusses of cobalt blue, buds heliotrope. Extremely vigorous and free blooming.

VICTOR LEMOINE (Lemoine, 1906). This handsome lilac has long racemes of both pink and blue. The fully open blooms are more blue than pink. Keeps well when cut.

PRESIDENT GREVY (Lemoine, 1886). Great panicles of cobalt blue. A best seller for 60 years.

Pink, Red and Wine Colors

MME. ANTOINE BUCHNER (Lemoine, 1909). A handsome shrub flaunting big, handsome spikes of semi-double, fragrant pink blooms. For the most discriminating taste. One of the best.

PAUL THIRION (Lemoine, 1915). Erect, heavy trusses with large flowers of claret rose. The buds are carmine. Handsome even at a distance.

PRESIDENT LOUBET (Lemoine, 1901). An early bloomer, which retains its charm when others have faded. Buds claret red, flowers large, crimson purple.

White

EDITH CAVELL (Lemoine, 1916). A large, well-shaped panicle of creamy white, with buds of rich cream color.

MME. CASIMIR PERIER (Lemoine, 1894). Another creamy white which blooms freely, but does not grow too tall, making it a good plant for the foreground.

ELLEN WILLMOTT (Lemoine, 1903). Great masses of pure snow-white blooms, very beautiful.

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RENE JARRY DESLOGES (Lemoine, 1905). Carries large trusses of lobelia blue touched with mauve. The buds are mauve, but the all-over effect is blue and pink. Early.

KATHERINE HAVEMEYER (Lemoine, 1922). The broad trusses of blue and mauve are striking. An early bloomer.

CHARLES JOLY (Lemoine, 1896). Long, completely filled trusses of deep crimson violet. Tall, with slender growth; an old variety still popular.

Note: "Lilacs of America," published by the American Association of Botanical Gardens & Arborets in 1953, is a very useful 48-page summary of information on all types and varieties, indicating the best in each color, where they originated, where they are grown in public collections and nurseries, etc.

It is available from the Scott Horticultural Foundation, Swarthmore College, Swarthmore, Pa., price \$1.00 per copy, or can be consulted in the Arboretum Library.

Ye Olde Herballs

(Continued from Page 8)

acquired a widespread reputation by his successful treatment of the terrible epidemic that swept over Germany in 1529. This little book of medical instructions and prayers against the plague published in London and entitled "A worthy practice of the most learned Phisicke, Maister Leonerd Fuchsius, Doctor in Phisicke, most necessary in th's needful tyme of our visitation for the comfort of all good and faythfull people both olde and yonge, both for the sick and for them that woulde avoyde the daunger of the contagion."

The Germans took up the work of the Latin Herbalists and greatly improved their works. Otto Brunfels' Herbal (1530) and Hieronymus Bock's "New Kreutter Buch" (1539) were herbals produced in Germany in this period.

The two last great herbals were Gerard's "The Herball or Generall Historie of Plantes" and John Parkinson's "Paradisi in Sole Paradies Terrestris." John Gerard, probably the best known of the English herbalists, was a native of Cheshire and was a "Master in

Chirurgerie" but was better known as a very successful gardener. In his herbal he tells that for twenty years he supervised the gardens of Lord Burleigh in the Strand, also Theobalds in Hertfordshire, besides having, himself, a famous garden in Holburn, then the most fashionable district in London.

In his garden he had over one thousand different herbs and in 1596 he published a list of these, this being the first complete catalogue ever assembled, naming the contents of a single garden. What a wonderful garden that must have been and how full of rarities "from white thyme to the double flowering peach." He often writes of various plants, "These be strangers in England, yet I have them in my garden where they flourished as in their natural place of growing." As many as fifty of Gerard's friends are mentioned in his herbal as having sent him plants or seeds from many and various places in the world.

Gerard's reputation, however, rests upon "The Herball or Generall Historie of Plantes." It was printed by John Norton, the Queen's printer, in 1597. The framework of this book was taken from Dodoens' splendid Latin Herbal and was translated by Dr. Priest, who unfortunately died before the work was completed. Gerard simply finished the work and made additions that give the book charm and a place in our affections.

An improved edition was brought out by Thomas Johnson thirty-six years after the original work was published. Johnson was an apothecary in London and had a physic garden of his own at Snow Hill. His first work was a short account of plants collected by members of The Apothecaries Company on an excursion in Kent. Later on descriptions of botanical tours in the west of England and in Wales appeared from his pen. However, it is as an editor of Gerard's Herball that he is chiefly remembered as he greatly enlarged the Herball and corrected many errors.

This is a massive volume listing at least 2,850 plants, illustrated by about 1,800 beautiful woodcuts, nearly all of which Norton

obtained from Frankfort. There is an illustration of the Virginia potato, probably the first published appearance of this plant.

Here is a delightful quotation taken from this Herball, most likely from Gerard's own pen. In enumerating the eight virtues of Solomon's Seale we find this gem: "The root of Solomon's Seale stamped while it is fresh and greene and applied, taketh away in one night or two at the most, any bruise, black or blew spots gotten by falls or woman's wilfulness in stumbling upon their hasty husband's fists or such like."

John Parkinson, who lived from 1567 to 1650, was the last of the great herbalists who grew and wrote of plants primarily for their practical uses or their virtues. He lived in London, where he was famous for his garden and where he became apothecary to James I and herbalist to Charles I. The first of his two books appeared in 1629 under the title of "Paradisi in Sole Paradisus Terrestris." The first three words form a pun on the author's name and may be translated "Of-Park-in-Sun." The book is dedicated to Queen Henrietta Maria with a prayer she will accept "this speaking garden."

The frontispiece is a very beautiful full-page woodcut apparently depicting "The Creation," with Adam and Eve in the Garden of Eden and all manner of trees and flowers with the River of Life flowing through. The dedication on the same page is enclosed in a heart-shaped frame and is as follows: "A garden of all sorts of pleasant flowers which our English ayre will permitt to be noured up, with a Kitchen Garden of all manner of herbes, rootes and fruits . . . and an orchard with all sorte of fruit-bearing Trees and shrubbes fit for our Land, together with the right ordering, planting and preferring of them and their uses and virtue. Collected by John Parkinson, Apothecary of London, 1629."

"And thus," Parkinson concludes, "have I finished this worke and furnished it with what so ever art and nature concurring could effect to bring delight to those that live in our

HARDY ENGLISH FERNS

Wide Selection

WRITE FOR PRICE LIST

Carl Starker Gardens

Jennings Lodge, Oregon

climate and take pleasure in such things; which how well or ill done, I must abide everyone's censure; the judicious and courteous I onely respect, let Momus bite his lips and eate his heart and so Farewell."

His later book (1640) is a much larger volume dealing with plants in general, called "Theatrum Botanicum," or "The Theater of Plants, or, an Herball of a Large Extent." This herbal is, in some respects, an improvement on Johnson's Gerard and is certainly more restrained in the claiming of virtues for each plant described.

A certain system is followed in the treatment of each plant; first is a description; then the place from whence the plant is derived, followed by the time of blooming. Then comes the names of all varieties, ending with a list of the virtues. This arrangement is also used in Gerard's herbal. The first chapter of this herbal is entitled "An Epistle to the Courteous Reader—a Long Chapter the Ordering of a Garden of Pleasure" where much excellent advice is given. "After all these fair and sweete flowers I must adde a few sweete herbes, both to accomplish this Garden and to please your senses by placing them in your nosegayes or elsewhere as you list."

He writes of rosemary and lavender, sage and marjoram and all the herbs then in use. From his garden of pleasant flowers he leads us into the Kitchen Garden, full of strawberries and other fruits and vegetables that are in common use today. Sixty-three chapters are devoted to the Kitchen Garden which in-

cludes all the old familiar herbs. Thence into the orchard where apples, pears, peaches, cherries, apricots, nectarines, figs, almonds, walnuts and vines are discussed, ending with the Virginian vine which he says, "We know of no use but to furnish a garden and to encrease the number of rarities."

The study of plants and their uses as applied to human ills has occupied the minds of men from the earliest times down to the seventeenth century. Innumerable books were written, not only in England, but in Germany, Holland, France and Italy. During the Elizabethan age in England the herb garden was an important feature of the grounds and the knowledge and use of herbs widespread.

The early colonists brought with them to this country a knowledge and an understanding of the use of herbs and it was not long before many of the old familiar plants were flourishing in the little dooryard gardens of the towns and villages of New England and the other colonies.

1 1 1

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American Trees for British Forests

(Continued from Page 19)

away at Powys Castle; this one is 175 feet tall.

All the western conifers mentioned above are, of course, true forest trees, and as such have been similarly employed in Britain. There are numerous other species which have been planted in profusion in parks and gardens. Among the latter are the Monterey cypress (better known as the *macrocarpa*), the beautiful incense cedar (which is not a cedar) and the blue spruce.

With over 350 years' experience of eastern American species and a hundred years' experience of western species, the British will have no difficulty in finding suitable types for re-

planting one of their most famous forests. They may have had better shrubs and flowers from Asia; better fruits from the Near East and the Mediterranean, but for trees, both ornamental and for timber purposes, those they have acquired from the North American continent have been unsurpassed.

Some strict nationalists in Britain are undoubtedly displeased by the decision to use imported trees in Sherwood Forest, but the average British man-in-the-street, who is still a boy at heart and still counts Robin Hood as one of his greatest heroes, will welcome the newcomers for their virility and strength.

Book Reviews

(Continued from Page 29)

page. No. 1 is a reproduction of Redoute's beautiful painting of "Rosa Mundi."

Those in monochrome show a wide selection of these roses growing in gardens—some as hedges, some as specimens, some in groups—with close-up pictures of others to show the form and arrangement of foliage, buds and open flowers. Again, many of the half-page plates deserved more space, and in a future edition this might be done at the expense of some of the color plates. A short but comprehensive bibliography and an admirable index concludes the book.

Mr. Thomas is to be congratulated and thanked for his achievement.

B. O. M.

List of Plant Names

(Continued from Page 26)

| | |
|-----------------------|--|
| <i>Sinomenium</i> | Chinese, and Gr. moonseed |
| <i>sino-nuttallii</i> | Chinese Nuttallii (Rhododendron) |
| <i>sinuatus</i> | wavy-margined |
| <i>sisalanus</i> | of Sisal, Yucatan |
| <i>sisymbifolius</i> | Sisymbrium-leaved |
| <i>Sisyrinchium</i> | old Greek name |
| <i>Sium</i> | old Greek name |
| <i>Skimmia</i> | Japanese, Skimmi, hurtful fruit |
| <i>smaragdinus</i> | of emerald |
| <i>Smilacina</i> | resembling smilax |
| <i>Smilax</i> | ancient Greek name |
| <i>Smirnowi</i> | for M. Smirnow, Russian botanist |
| <i>Smithii</i> | for Sir J. E. Smith, founder of Linnean Society, London |
| <i>sobolifera</i> | bearing creeping, rooting stems |
| <i>Sobralia</i> | for Fr. Mart. Sobral, Spanish botanist |
| <i>socialis</i> | sociable, companionable |
| <i>socotranus</i> | of Socotra, island off Arabia |
| <i>sodomeum</i> | of Sodom |
| <i>Solandra</i> | for Daniel C. Solander, Swedish botanist |
| <i>solandriflora</i> | Solandra-flowered |

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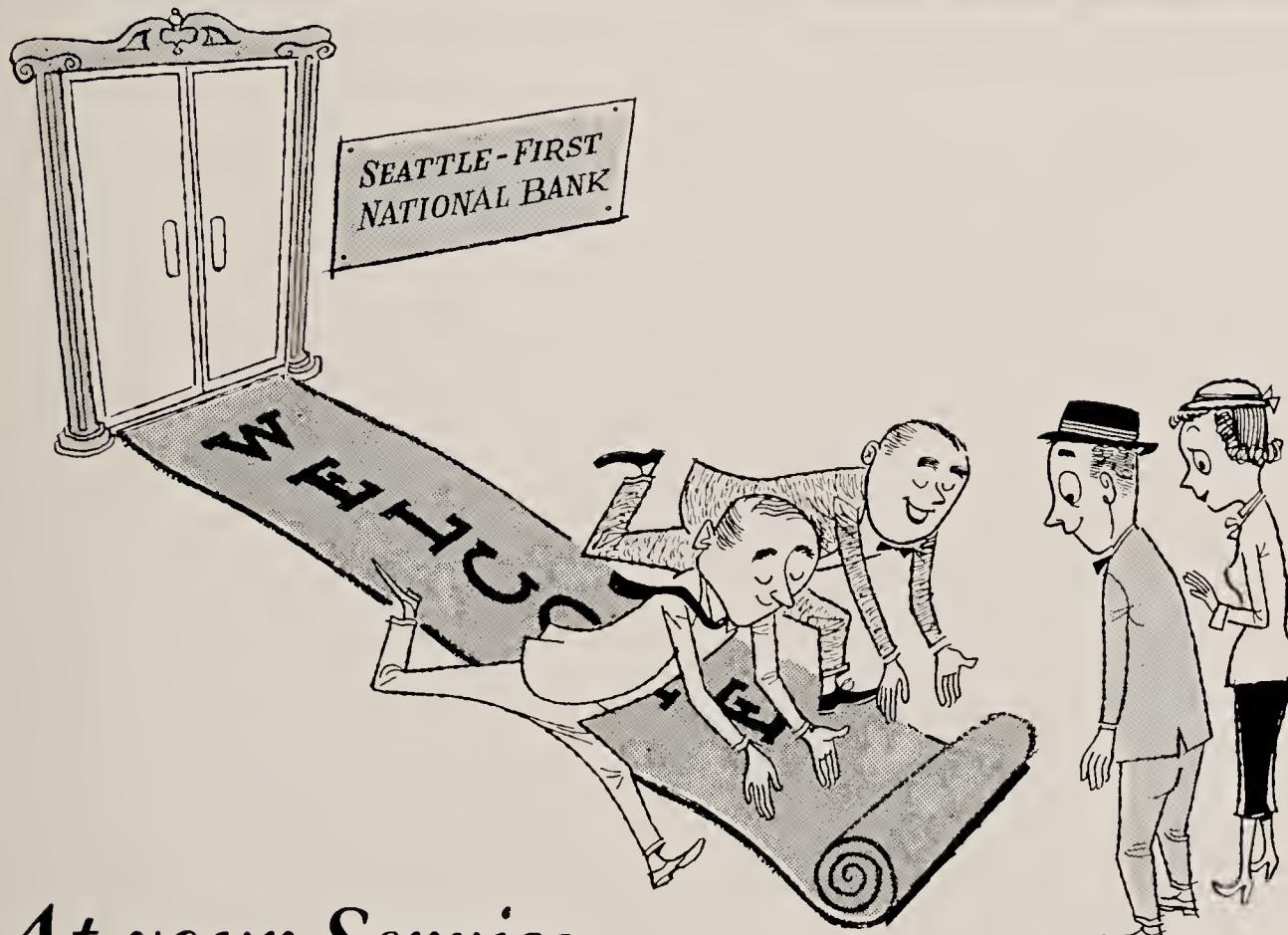
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